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ABSTRACT

This guide is intended to help Connecticut school districts plan, implement, and evaluate a comprehensive vocational program for secondary schools and to assist in revitalizing existing programs. The guide is divided into three parts. The first part is an overview of vocational education, providing some historical and current perspectives as well as a look to the future. Key curriculum development activities, including undertaking a needs assessment and developing philosophy, goals, and objectives, are presented in part 2. The final section concerns curriculum content. Chapters in this section outline the stages of vocational education and give examples of curriculum content, scope, and sequence. Appendixes contain statewide goals for education, resources, and a glossary. (KC)

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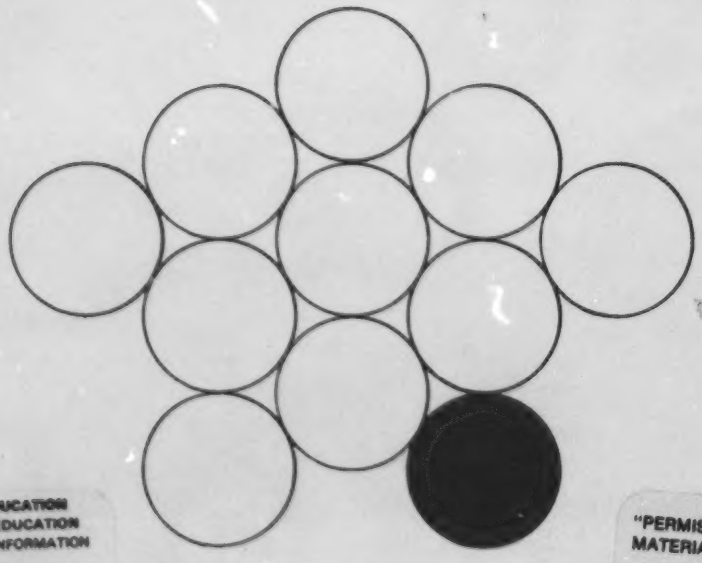
A GUIDE TO CURRICULUM DEVELOPMENT IN VOCATIONAL EDUCATION



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This is one of a series of 12 guides to curriculum development prepared under the direction of the Bureau of Curriculum and Staff Development, Division of Elementary and Secondary Education, and published by the Connecticut State Department of Education. The guides may be reproduced in whole or in part as needed.

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Foreword

Connecticut has a strong commitment to equity and excellence in public education. The *Comprehensive Plan for Elementary and Secondary Education, 1980–1985*, embodies that commitment. Now this guide to curriculum development, part of a series, is one of the ways in which the State Board of Education is carrying out that commitment.

This concern for equal educational opportunity, dominant in the 1970s and continuing into the 1980s, has been expressed in a number of notable actions:

The State Supreme Court's historic school finance reform decision (*Horton v. Meskill*, 1978) led to Connecticut's educational equity legislation.

Statutes growing out of this concern for educational equity are Sections 10-262c, 10-262e and 10-16b of the Connecticut General Statutes. Sections 10-262c and 10-262e alter public school funding practices, more than doubling state support over a five-year period and setting a required minimum expenditure per pupil in each school district. Section 10-16b specifies educational programs which must be offered in all districts, with the requirement that they be "planned, ongoing and systematic."

In Connecticut's *Comprehensive Plan for Elementary and Secondary Education, 1980–1985*, submitted to the General Assembly in 1980, the State Board of Education pledged to offer local school districts a greater level of technical assistance and more positive leadership in planning, implementing and evaluating school programs.

The guides have been developed to provide tangible assistance and support to local school districts in complying with the legislative mandate. The titles of the guides correspond to the subjects which Section 10-16b requires all school districts to offer their students: the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking and spelling; mathematics; physical education; science; social studies, including, but not limited to, citizenship, economics, geography, government and history; and, at least on the secondary level, one or more foreign languages, and vocational education. The goals and objectives set forth in each of the guides relate to the

statewide goals endorsed in the *Comprehensive Plan*, namely, motivation to learn, mastery of the basic skills, acquisition of knowledge, competence in life skills and understanding of society's values. *A Guide to Curriculum Development in Vocational Education* is also compatible with the goals and recommendations set forth in Connecticut's 1981 master plan for vocational, career and adult education, entitled *Education and Work: Agenda for Action*. The plan, prepared in response to Section 10-96a (see Appendix B), is revised biennially.

Vocational education must be dynamic, continually updated to reflect changes within occupations and the economy. This is more important today than ever before, with technology changing rapidly and radically, and permeating every occupational field, from farm to office, from business to profession. Curricula must reflect recent technological changes while still providing the basic literacy skills in language arts, mathematics and science that are a precondition to successful employment.

The pressure on high schools to provide vocational and career training for a sizeable segment of the student population is strong. So are the demands of business and industry that the educational system graduate more individuals prepared for entry-level jobs and for further training. Strong links with business must be forged and schools must adopt and adapt methods, schedules and learning activities to fit increasingly diversified student bodies.

A Guide to Curriculum Development in Vocational Education is intended to help school districts plan, implement and evaluate a comprehensive vocational program for secondary schools and to assist in revitalizing existing programs. We hope the guide will make a positive contribution to the process of curriculum development in vocational education so that local districts can serve their students and private industry well.

The State Board of Education curriculum guides are not mandated courses of study for any student or any grade level. Each is intended solely to assist local district educators in the development of curricula. Each guide reflects the thinking and experience of an array of experts in its subject area who become, through this document, an important resource to local district educators.

The Connecticut State Board of Education frequently has expressed its conviction that the diversity of the state's public school system is one of its great strengths. Students, schools and communities do not have identical educational needs; imposing a standardized curriculum would impair, not improve, learning opportunities for students.

It is important for local district educators to keep the position of the Board in mind as they use this guide. There is much of value here which can be used to strengthen instructional practices and promote excellence in the curriculum development process. But these ideas can only enhance, not replace, the creativity, talent and commitment of the people in our local school districts who use this guide.

Mark R. Shedd
Commissioner of Education

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Finally, and most appropriately, recognition is made of the special contribution of Walter Bialobrzeski, Assistant Director of the Division of Vocational and

Adult Education, whose death on December 30, 1981, following a lengthy illness, saddened all who valued him as a person and respected him as an educator. Walter's very distinguished service to Connecticut's vocational education community spanned 35 years and his expert knowledge and total commitment to vocational education are reflected in this document.

E.J. Terrell, Chief
Bureau of Vocational Services

Preface

Vocational education is not what it used to be and it will never be the same again. Forces of change and the demands of the '80s are too strong to resist. Vocational education must adapt both *what* is taught and *how* it is taught to accommodate emerging technologies, the changing workplace, demographic shifts and a social climate in which attitudes about sex roles, age and the work ethic are being transformed.

During this transition period, while vocational educators are adjusting programs to fit new technologies that use new materials, tools and methods, they must, at the same time, continue to offer much of the training they have in the past. Many of the new technologies—the computer, word processor, telecommunications and robots for example— lend importance to both mastery of basic skills in language and mathematics and the acquisition of advanced vocational skills. More than ever before, schools must prepare students for change, encourage flexibility and develop skills necessary for successfully adapting to new situations.

It is within this stimulating environment that school districts must review their efforts in the field of vocational education and develop new programs to meet students' and society's needs for the '80s. *A Guide to Curriculum Development in Vocational Education* is designed to help local school districts develop and implement a planned, ongoing and systematic program of instruction in vocational education. Much of the material can apply also to curriculum development in regional vocational-technical schools, but the primary audience is vocational education curriculum planners in comprehensive high schools. Because vocational education is a complex instructional area, curriculum development presents a significant challenge for local planners.

Scope of vocational education

Vocational education encompasses numerous subject areas and covers many different kinds of skills. Other curricula—science, mathematics or foreign languages for example—cover a much narrower range of skills. In foreign languages for instance, although a number of different languages may be offered, the skills students acquire—listening, speaking, reading, writing and understanding culture—are the same.

The major vocational education subject areas are:

agriculture education
business and office education
cooperative work education-diversified occupations
health occupations education
home economics education
industrial arts education
marketing and distributive education
trade and industrial education

Within each of these areas there is more than one career objective/field. For example, nursing assistant, laboratory technician and animal technician are career objectives/fields within the major vocational education area of health occupations.

As noted in the Foreword, all of the State Board of Education's curriculum guides describe the curriculum development process and suggest, but do not prescribe content. An emphasis on process is particularly sensible for vocational education where overall content is very broad, but within each subject area content and skills may be very specific.

Organization of the guide

A Guide to Curriculum Development in Vocational Education is divided into three parts. The first is an overview of vocational education, providing some historical and current perspectives as well as a look to the future. Key curriculum development activities including undertaking a needs assessment and developing philosophy, goals and objectives are presented in Part II. Chapters on resources for vocational education and evaluation are also found in Part II. The final section concerns curriculum content. Chapters in this section outline the stages of vocational education and give examples of curricula content, scope and sequence.

Information about the curriculum development process can be found in *A Guide to Curriculum Development: Purposes, Practices and Procedures*, a companion document for all of the State Department of Education curriculum guides. This publication provides guidelines for district-wide curriculum development as well as outlining general principles for curriculum developers in individual instructional areas. While some specific references to useful information in *Purposes, Practices and Procedures* will be found in this guide, vocational education curriculum planners are encouraged to review the companion document in its entirety before beginning their work.

Part I

An Overview

Vocational Education: Past, Present and Future 1

The history of vocational education has been characterized by change. What has remained constant is the reason for change; vocational education has always adapted to meet new needs, to serve new students, preparing them for new and emerging occupations. Now, as the pace of change in the world of work accelerates, vocational education must again respond by stressing mastery of basic skills and by teaching job skills for tomorrow's world.

History

Vocational education is actually as old as mankind. When cave dwellers taught their sons and daughters to hone arrow points, to skin animals and to plant seeds—that was vocational education. It might be said that the first vocational education curriculum was everything that needed to be learned for survival.

Through the centuries, as tasks became more specialized, what we today call vocational education was provided in the system of apprenticeship. Apprenticeship training for employment in areas other than the professions (ministry, teaching, law and medicine) persisted until well into the twentieth century.

In the United States vocational education dates from the second half of the nineteenth century when the Industrial Revolution dramatically increased the need for skilled workers. The earliest vocational education in the United States was modeled on the Russian system of establishing shops—typically for mechanical arts—in secondary schools.

By the end of the nineteenth century and in the early decades of the twentieth, many Connecticut schools were offering vocational education courses. For example, as early as 1881 the Dwight and Skinner elementary schools in New Haven were offering carpentry courses—reportedly taught by the schools' janitors. During the decade of the 1880s most of the state's larger communities were offering courses in wood- and metalworking and by 1884 Central Connecticut State College in New Britain offered shop courses for students preparing to be teachers.

Home economics was taught as early as 1889 at Hartford High School. With encouragement from the State Board of Education, agricultural education was offered in some high schools: in 1907 the board issued a seven-page plan for teaching vocational agriculture; by 1910 across the state there were 11 students enrolled, but by 1914, 20 towns were offering vocational agriculture courses.

By 1906 an organization called the National Society for the Promotion of Industrial Education was lobbying in support of federal aid for vocational education. Aid came eventually with passage of the Smith-Hughes Act of 1917 and ever since the federal government has played an important role in vocational education.

By requiring state and local education agencies to meet specific criteria and standards to qualify for funds, the federal government has influenced the growth of vocational education in local education agencies. There has been growth in content—new areas of instruction have been added to the curriculum—and in the number of students participating.

Connecticut was one of the first states to support statewide trade and industrial education. Legislation to establish trade schools was passed in 1907. The first two State Trade Education Shops were opened in 1910 in New Britain and Bridgeport. Before long the term Trade School replaced Trade Education Shop and was, in turn replaced by Technical School. New schools were established and each one placed major emphasis on skills needed in the school's locality. Putnam, Manchester and Middletown, for example, offered instruction in textiles, then a dominant industry in these towns, and the school in Danbury had courses in hat-making and hat-finishing.

Legislation passed in 1947 authorized the State Department of Education to directly operate regional vocational-technical schools. Since then program offerings have been greatly expanded. There are now 17 regional vocational-technical schools, the newest opened in 1977. For names and locations, see Appendix D.

Vocational education today

More recently, the *Master Plan for Vocational, Career and Adult Education* (initiated in 1976 and updated biennially thereafter) has encouraged local education agencies to strengthen and expand vocational education.

While one function of vocational education—to prepare participants for gainful employment and active citizenship roles—has remained constant since the turn of the century, its form has changed dramatically. It is currently defined as technical training or retraining which is given in schools or classes (including field or laboratory work and remedial or related academic and technical instruction) under public supervision and control, or under contract with a state board or local educational agency. It is conducted as part of a program designed to prepare individuals for gainful employment as semiskilled or skilled workers, technicians, or subprofessionals, in recognized occupations as well as in new and emerging occupations or to prepare individuals for enrollment in advanced technical education programs. It excludes, however, any program to prepare individuals for employment in occupations generally considered professional or which require a baccalaureate or higher degree.

Today, the vocational education curriculum is much broader than ever before. In addition to school classes, shops and laboratories, courses and programs now reach into the community with cooperative work experience, internships and clinical placements. Different too are the students involved. Women are now taking courses which traditionally attracted only men; men are pursuing subjects previously thought to be for "women only."

Handicapped and minority students are discovering that vocational education can be for them too. Also, students for whom college is a realistic possibility are opting for vocational education.

Today more than ever before vocational education is recognized as a vital function of public education. And its role is expanding as more young people, as well as older workers seeking to advance or change careers, look to vocational education to provide skills training.

The future

There will certainly be more demand for vocational education in the future. Equally certain is that increased demand cannot be met by simply providing more of the courses currently offered. The vocational education curriculum will have to reach out to the community it serves through cooperative arrangements that capitalize on the equipment and knowledge available at employers' workplaces.

One indication of growth potential is found in workforce projections. In a paper commissioned by the State Department of Education and titled "Vocational-Technical Training for the 1980s," Daniel B. Dunham notes that 78,000 more people will be employed in Connecticut in 1985 and more than ". . . 80% of them, or about 57,000 will not need a baccalaureate degree for job entry." This estimate indicates that the training needed by a large portion of the state's future workers should be provided through vocational and technical education. Additional demand will come from workers displaced by technological change and in need of retraining. For example, some manufacturing jobs may be lost to robots, but the need for people to build and service robots will increase.

The future of vocational education will, however, be influenced more by changes in the curriculum content than by increased numbers. To keep up with fast-paced technological advances in business and industry, vocational educators must be more versatile, more creative and quicker in responding to changes in the workplace. It will be essential to incorporate the cooperative work experience methodology into all vocational courses.

Many changes are already on the horizon. It is now clear that vocational education must provide computer literacy. Virtually every phase of business and industry now utilizes computer technology and students must be prepared to use computers in their work (and in their homes as well). An electronic revolution in the office—characterized by computers, word processors and sophisticated telecommunications equipment—has already triggered dramatic revisions in business and office education. Other subject areas must follow suit.

The computer and television are coming into common use in the health services. For example, at some hospitals a computer assists in providing basic

patient information and medical history necessary for hospital admission. Computers are scheduling medications and specifying proper dosages. Some ambulances are equipped with television cameras which permit emergency personnel to communicate with the hospital staff and receive vital instructions for patient care during transit.

In manufacturing, computerized process control is becoming commonplace and robots are manning production lines. In the retail trades computers are used for inventory and cash registers are computerized, some even programmed to communicate with an electronic voice.

In addition to increasing emphasis on computer technology, vocational education must adapt to many other changes affecting the work environment. More attention is needed in the areas of electronics, mariculture and alternate energy, which are emerging occupational areas in the state. New skills are needed by the aerospace industry and office workers with new kinds of skills are in demand by the state's growing number of corporate headquarters.

Materials—the way they are made and used—are undergoing dramatic changes too, with many synthetic materials replacing natural. And in agriculture, genetic engineering is modifying animals and plants and the ways in which they are cared for and grown. Vocational educators must be aware of these and many other trends.

The challenge to curriculum planners is to devise programs, within the appropriate role of public education, that will be relevant today and flexible enough to respond to tomorrow. Vocational education in the future will depend in large measure on how local districts develop programs in their comprehensive high schools or in cooperation with other school districts in regional programs. Local efforts will be supported by technical assistance from the state.

2 Trends and Challenges

In developing a curriculum for the future, planners must be aware of the social and economic trends that impact on vocational education. Changes in individual and family life styles, for example, influence occupational choices. Labor market trends are basic to program planning (see Needs Assessment, page 24). To respond and adapt to these and other changes is a challenge vocational education planners must meet. In this chapter some significant trends, and the challenges they present to curriculum planners, are discussed. They are:

- demographic trends
- changes in employment
- technological change

- retraining workers
- nontraditional occupations
- special populations

Demographic trends

According to demographic forecasts, there will be no significant population growth in Connecticut during the 1980s. Changes in the population's age and ethnic distribution, however, will impact on vocational education. More out-of-school youth and adults, more women, minorities, and handicapped individuals are expected to seek education for employment.

This demand will require vocational education to provide new and increased services. For example, bilingual vocational instruction, supportive services for students pursuing nontraditional careers and special programs for the handicapped will be needed (see "Special populations," p. 9). Vocational education planners must also begin to develop new delivery systems such as modular instructional units and flexible scheduling to allow learners to enter programs at different levels according to individual needs.

Changes in employment

In the decade ahead we can expect significant alteration in the nature of the workplace and the types of skills needed by employers. There are very few unskilled jobs in the Connecticut economy and in the future even higher levels of proficiency will be necessary for employment and advancement in the high technology industries that will dominate the state's economy. Students will also need transferable skills for occupational mobility and long-term employment opportunities.

Recent studies show that employers place more emphasis on job-preparation and generic skills and are less interested in job-specific skills. For curriculum planners this signals the need to emphasize broadly based, transferable skills within job clusters and to stress reading, writing and computation. Equally important for students preparing to enter the job market are employability skills such as good work habits, understanding job safety principles, getting along with others, knowing how to use occupational information and how to apply for a job.

Technological change

The pace of change in American business and industry has accelerated dramatically since the end of the Second World War. Technology has exploded, altering traditional work places and creating entirely new enterprises. Keeping up with technological advances, preparing students for changing and new occupations should spur curriculum planners to think creatively. Vocational education must adapt to and reflect the demands of new technologies and provide students with the skills needed for entry-level positions and on-the-job training as well as postsecondary education. While some new technologies require new skills, in many cases they simply involve new applications and different combinations of traditional skills.

Nationally it is estimated that *new* technology will account for most of the 15 million new jobs which will be created in the United States by 1990. Even now

many new industries are experiencing severe shortages of skilled workers. For example, while more and more consumers are purchasing solar energy systems, the supply of solar mechanics is not keeping up with demand. A similar shortage exists for operators of word processing equipment.

Another example is significant for Connecticut. Many new workers will be needed to manufacture and service robots. According to one estimate there will be 250,000 robots at work by 1990 and many of them will be made in Connecticut, location of the nation's largest robot maker.

Retraining workers

Not too long ago manufacturing accounted for most of the job opportunities in Connecticut. This is no longer true. Today the growth rate of job opportunities in service occupations exceeds the growth rate for manufacturing. In this regard Connecticut's experience is a reflection of national trends. Speaking about occupations for the future, Arden L. Bement, vice president for technical resources at TRW, Inc., has said, "We are coming off the peak of the Industrial Revolution and up the slope of the Information Revolution."

Such major changes in the complexion of the national economy are important to vocational educational planners because they affect persons in the workforce as well as traditional students. Some workers will lose their jobs and will need retraining to acquire new skills or upgrade skills for new jobs. Schools can meet the need for retraining in a number of ways. They can offer on-site programs at an employer's premises to prepare workers for reassignment. They can schedule programs for adult workers during nonschool hours, using the vocational education facilities at the school. Or they can include adults with the regular students in daytime classes, an approach that is gaining advocates nationally.

Nontraditional occupations

Occupations are described as nontraditional for men or women entering a field in which they customarily would not have worked. Many occupations traditionally have been dominated by one sex. Trade and technical areas, for example, were considered male occupations while office and nursing careers were associated with females.

Until recently, many vocational education programs, like jobs, were stereotyped by sex. The current use of the term "nontraditional" to designate vocational education programs calls attention to the changing pattern of enrollment and employment in all occupations. Increasing numbers of adults, particularly adult women, require entry-level skill training in order to prepare for job opportunities in nontraditional fields. Women who must support themselves and their families are choosing occupations previously reserved for males, occupations which often pay higher wages and offer opportunities for career advancement. Both men and women are realizing that the ability to learn job skills is not related to sex or age, but that the logical determinants of career choice should be aptitude, interest and ability to perform successfully on the job.

Secondary level and adult students who choose programs in which they may be considered nontraditional may need special support. Counseling and information sessions about the work world, the nature of various jobs and their work environments have proven valuable and encouraging to nontraditional students. Attention must be paid to the development of unbiased staff attitudes and behavior in counseling and student recruitment as well as in the classroom. Teaching materials should be chosen which do not perpetuate age or sex-role stereotyping.

Curriculum planners also need to consider the obligations that students may have outside the vocational program. Assistance in arranging for child care, transportation to and from the training site, the timing and duration of training sessions for students who also hold jobs are all components of a successful curriculum.

Special populations

Although Connecticut's schools have made considerable progress in increasing the participation of students in vocational education, greater effort is called for to realize equal opportunity. Vocational education must be available for all youth and adults including those who are gifted and talented, college bound, economically and educationally disadvantaged, handicapped and out of school. Some individuals may fall into more than one special category.

Curriculum planners must insure that particular needs of these special populations will be met. The use of alternative educational settings, effective assessment techniques and innovative instructional methods are just a few of the many possible adaptations of standard methods that can help exceptional students.

Chapter 5 of *A Guide to Curriculum Development: Purposes, Practices and Procedures* discusses curriculum development for special populations. Here we will outline some of the particular needs and problems these students encounter in vocational education.

Gifted and talented. Too often the advantages vocational education can offer to gifted and talented students have been overlooked. Frequently gifted and talented students concentrate on academic subject areas in preparation for post-secondary education, but increasingly these students are considering vocational-technical education. Gifted students need to be challenged in their vocational education courses. They need diversity of subject matter and accelerated instruction. Such students need to be encouraged to use their own creativity and gifts in structuring activities rather than relying on formal instruction.

Adults. Planning for adults should take into account the broad range of life experiences these students bring to their studies. They may require a program format quite different from traditional vocational education methods and schedules.

Adults often prefer to work for a much longer and concentrated period of time during class and therefore finish tasks more quickly than adolescents. Short-

term skill training programs (10–20) weeks which concentrate on occupational skills have proved successful for adults seeking immediate employment. Pilot programs where adults and high school youth learn the same skills, side by side, in school and worksite settings have also been successful. Curriculum planners should consider a variety of formats when developing curricula.

Supportive services should be an integral part of any vocational education program for adults. Adult students may require review courses in math, orientation sessions on job-seeking skills and resume preparation, and information and counseling about job opportunities. Adults lacking proficiency in written or spoken English may also need bilingual vocational training.

The State Department of Education's Bureau of Adult and Community Education can provide more detailed information and assistance to committees concerned with developing curricula for this special population.

College bound. Students who are college bound can benefit from skills and knowledge acquired in vocational education courses. Skills learned in vocational education can be the basis for postsecondary studies, such as engineering and business administration; they can be the means for earning income while in college and will certainly be useful in adult life.

Disadvantaged. Students may seem to be at a disadvantage in vocational programs for various reasons, yet their potential for success may be good. They may be academically underprepared or have limited English proficiency. They may lack confidence and be uncomfortable in a school or work setting. Assessing their strengths and identifying their special needs is a necessary first step to planning and implementing vocational programs that will serve the needs of the disadvantaged.

The expectations of teachers and staff have a strong influence on performance. As pointed out in *A Guide to Curriculum Development: Purposes, Practices and Procedures*, it is important that teachers hold the same expectations for all students, using materials and techniques that will help each student to achieve what is expected. Goals should be realistic but not self-limiting. Learners with special needs should be exposed to a full range of curriculum offerings and should be expected to master the same basic skills and concepts as other students. Often disadvantaged students express their feelings openly and honestly, and show a willingness to learn when the practical value of a subject's content has been clarified.

In addition to teaching occupational skills, vocational programs should place a strong emphasis on the basic skills of speaking, reading, writing, and mathematics. Remedial programs should be available. There should be a direct relationship between classroom activities and the work place, and support services—especially guidance and counseling—should be an integral part of the program, not an adjunct to it. Help with job search and placement is essential.

Attitudes and habits—a negative self-image or indifferent or hostile behavior—may need to be changed. Frequent successful achievements and gradually increasing responsibilities can have a positive effect, increasing self-motivation.

Techniques to promote learning include:

- present material in discrete units and in a precise, clear manner;
- secure a high number of active responses from all students;
- reinforce correct student responses immediately;
- teach essentials;
- provide for adequate practice;
- choose terms that are familiar to students, and
- teach subskills that are important for more complex tasks.

Handicapped. Handicapped students can look forward to living successfully in society when they acquire necessary skills. Giving handicapped students the opportunity for vocational education increases their potential for living productive and happy lives.

Special efforts are required to insure that the handicapped are not denied the opportunity for vocational education. At the minimum an Individual Education Plan (IEP) should be developed for each student. What each student can reasonably be expected to accomplish will, of course, depend on his or her handicapping condition and its degree of severity. Whenever possible students should be mainstreamed in regular vocational learning activities. If mainstreaming is not possible, the principle of "least restrictive environment" should be applied.

Students with physical handicaps may require special materials, equipment or techniques to function effectively in some vocational education activities. For a unit in auto brake shoe replacement, for example, a student in a wheelchair might require a special lift or ramp to place the car at wheelchair level, a tray for tools and parts and a device to keep the wheelchair from slipping when pressure is applied to the brake shoe assembly. For some learners it may be necessary to provide an individual study area equipped with audiovisual equipment and a set of visual materials which break down the task into a series of simple steps. The student who has a hearing problem and is skilled in signing may require the services of an interpreter with signing skills.

In developing techniques to allow the handicapped to participate in vocational education perhaps the most important factor is overcoming long-standing misconceptions about the range of activities in which the handicapped can succeed. Curriculum planners must begin by asking "How can this course be made to work for the handicapped student?" and *not* "Can the handicapped student succeed in this course as it is now taught?"

Out-of-school youth. The scope of vocational education curriculum planning should include provisions for out-of-school youth. Individuals who have left a formal school environment frequently need vocational training to prepare for employment.

A program for out-of-school youth should begin with orientation and assessment. Prospective students should be informed about the program's goals, requirements and outcomes. Counselors may assess an individual by using an interview format, standardized tests or a combination of techniques.

Interviews can yield information about an individual's perception of personal interests, aptitudes, abilities, values and goals. Tests provide objective measurements of achievement, aptitude and interest. Subjective and objective data together can help students make a choice of occupational training program as well as identifying areas requiring remediation.

Looking ahead

To develop a vocational education curriculum that will serve both students and employers in the '80s and beyond, curriculum planners need to study current trends and to anticipate what the trends will mean in terms of future jobs and job preparation. These projections, used in combination with an awareness of the distinctive characteristics of vocational education, can result in a curriculum that is planned, systematic and ongoing, and that, at the same time, responds to present and future needs.

3 Notable Features of Vocational Education

Two distinctive features of vocational education are the basic nucleus on which the curriculum is built and the large number of organized groups that formally participate in vocational education. The nuclear or core program is the minimum offering districts should provide to meet the General Statute requirement for "planned, ongoing and systematic" vocational education. Participation by the groups described in this chapter is a key to successful, high quality vocational education and should be a feature of every district's program.

NUCLEUS FOR A PROGRAM

For most districts the recommended program described below constitutes only a **minimum** vocational education curriculum. Local school districts should provide additional vocational offerings to meet student interests and the training needs of local and regional business and industry. The recommended nucleus consists of vocational guidance and counseling as well as specific subject areas, some for the middle school/junior high level and some for the senior high school level. They are:

middle school/junior high	home economics education industrial arts education

senior high school	business and office education cooperative work education-diversified occupations home economics education industrial arts education

Vocational guidance and counseling

Vocational guidance and counseling is an essential part of effective vocational education at all grade levels. An effective guidance and counseling program encourages self-understanding, provides students with accurate, up-to-date information and offers opportunities to explore careers. It should be a joint effort by counselors and teachers.

Among the services that should be included in a vocational guidance and counseling program are:

- self-assessment
- objective testing of interests, aptitudes and abilities
- career information
- career counseling
- activities to develop decision-making skills
- program counseling for individual students
- job placement services

To describe in detail each of these activities is beyond the scope of this guide. The key point is that encouragement and assistance in career and life planning is vital to students who expect to enter the work force after high school as well as for those who plan on postsecondary education, including continuing education in combination with full- or part-time employment.

Middle school/junior high offerings

At the middle school/junior high level the nuclear program should include home economics and industrial arts. Offering these two subject areas for grades (6) 7–9 provides early experiences that can lead directly or indirectly to vocational or technical education for some students and provide useful life skills for others.

At this level home economics and industrial arts should provide realistic, hands-on exploratory and occupational orientation experiences, and develop basic skills needed as background for more advanced vocational education. Although these courses are essential in vocational education, they are not intended solely to prepare students for paid employment; they can also encourage personal growth and development and consumer awareness and "survival skills." (See *A Guide to Curriculum Development in Consumer Education.*)

Participation in home economics and industrial arts will motivate some individuals to continue in vocational education which is intended to lead to paid employment. Some will continue with vocational education courses offered in their local comprehensive high schools, while others may choose to attend one of the state's regional vocational-technical high schools or regional vocational agricultural centers. (See Appendices D and E for lists of these regional schools and centers.)

Senior high offerings

At the senior high school level (usually grades 10–12) home economics and industrial arts are continued as elements of the nuclear program, and business and office education and cooperative work education-diversified occupations are added. Also included in the nucleus are additional vocational subject areas that reflect local needs. Additions should include one or more of the following: health occupations, marketing and distributive education, occupational home economics, or trade and industrial education. There is statewide demand for workers in all of these fields. Examples of scope and sequence for these subject areas and others which might be selected are provided in Chapter 9.

Most school districts will find that a cooperative work education-diversified occupations (CWE-DO) course can expand opportunities for students by providing occupational instruction which might otherwise be economically unfeasible. This may be due to the limited number of students with similar occupational objectives or to the high cost of establishing an institutional program.

Partnerships between schools and employers make CWE-DO possible. It is an individualized program that makes use of the community and its resources, expanding vocational education beyond school walls. At the same time, participating companies develop a pool of trained job applicants.

CWE-DO combines on-the-job training with in-school "general and specifically related" instruction. "General" instruction teaches employability skills common to all occupations; "specifically related" instruction refers to technical theory and information related to the specific occupation for which the student is training, such as business-related mathematics.

Actual training is provided through part-time, paid student employment which conforms to state and federal labor laws. Thus, the facilities of local business and industry become vocational education classrooms and instruction is provided by experienced people working in the field. The school provides released time for students and the teacher coordinator who, with the employer, supervises on-the-job training under a training plan and agreement and coordinates the training with school experiences.

PARTICIPATION

A successful vocational education program actively involves a number of groups, some from school constituencies, others from the community. Vocational education advisory councils, vocational student organizations, business, industry and organized labor as well as other community groups and educational institutions can influence a vocational education program in many ways. Many school districts find that participation by these groups strengthens vocational education by insuring that program offerings are relevant and by providing assistance and support.

In Chapter 4, "Curriculum Committees," it is suggested that representatives of the groups described below be involved in the curriculum development process as members of the curriculum committee and its subcommittee; here the purpose is simply to identify and describe groups which should participate in vocational education.

Advisory councils on vocational and career education

At the state level the Connecticut Advisory Council on Vocational and Career Education (CACVCE) provides assistance in the planning and development of vocational education. Members of the council represent groups defined in the Vocational Education Act and are recognized for their specific knowledge and expertise about education and the world of work. Council members are appointed by the Governor. The council employs a full-time executive officer and staff to provide technical assistance to local vocational educational advisory committees and the State Board of Education. The council provides a broad range of services and provides assistance in the development of the local and state plan for career, vocational, and adult education. In addition, the council advises the State Board of Education on policy matters arising out of the administration of vocational programs.

Local advisory councils should also be established by individual districts, or through cooperative efforts by two or more districts in a region. Membership should include representatives of business, industry and labor, have appropriate representation of both sexes and reflect "an appropriate representation of the racial and ethnic minorities and the handicapped." Councils can advise local boards of education on current job needs and the relevance of the vocational education curriculum offered in meeting current job needs. Advisory councils can also provide an effective and ongoing communications link for education with business, industry and organized labor. They can provide many valuable contributions such as assisting with:

curriculum development
job placement
public relations and political activities
identifying and providing facility and equipment needs
offering technical assistance
providing cooperative work education placements

Vocational student organizations (VSOs)

Vocational student organizations should be an integral part of every vocational education program. VSOs serve to develop knowledge, skills and positive attitudes about vocational education by involving students in structured activities that offer opportunities for leadership training, peer learning, making employer contacts, developing positive self-concept and skill for employment, and demonstrating skill proficiency. Through local, regional and national events, VSOs give students opportunities to share experiences and to demonstrate leadership and vocational skills with students from all over the country. These organizations also provide recognition and awards for leadership and achievement at local, district, state and national levels.

In September 1981 the U.S. Department of Education issued a strongly supportive policy statement concerning vocational student organizations. In this statement the department noted that it ". . . strongly endorses their [student organizations] objectives and seeks to involve their thinking in the improvement of Vocational Education."

Unlike other student organizations related to instructional programs (e.g., language, mathematics or creative writing clubs), these groups have strong affiliations with national organizations and involve more highly structured programs and activities. Depending on vocational course offerings, one or more of the following groups may be active in a school district:

American Industrial Arts Student Association (AIASA)
Distributive Education Clubs of America (DECA)
Future Business Leaders of America/Phi Beta Lambda (FBLA/PBL)
Future Farmers of America (FFA)
Future Homemakers of America/ Home Economics Related Occupations (FHA/HERO)
Vocational Industrial Clubs of America (VICA)

Business, industry and organized labor

A close working relationship between vocational educators and representatives of business, industry and organized labor is essential. Without input from these groups about actual needs and conditions in the marketplace, vocational education would operate in a vacuum, unable to provide realistic, meaningful training. For example, companies and/or unions can help to develop and/or teach courses. They can lend or give equipment or participate in cooperative work education programs. By furnishing representatives for advisory groups and organizations (such as advisory councils, craft committees, education-work councils, joint apprenticeship councils, private industry councils or industry-labor-education councils) they can make valuable contributions to curriculum development.

Community groups and educational institutions

In addition to comprehensive high school vocational programs, other institutions such as regional vocational-technical schools, regional vocational agricultural centers and postsecondary schools (public and private) offer programs and courses that can supplement and/or complement high school offerings. Opportunities for cooperative programs with other school districts are also common. (See also Interdistrict efforts on page 29.)

Part II

Organizing for Curriculum Development

Curriculum Committees 4

The first step in the process of revising or developing a curriculum for vocational education is to designate a group of individuals charged to oversee curriculum development. For practical as well as philosophical reasons, curriculum development should be a group effort. Rarely, if ever, could one individual complete such a complex assignment within a reasonable amount of time. Also, especially for vocational education, different kinds of expertise from many individuals increases the value of the final product.

The vocational education curriculum committee

Depending on school district practices, the vocational education curriculum committee can be selected and appointed by the superintendent of schools, by the curriculum coordinator or by another person designated by the superintendent. The group appointed should be representative of the many constituencies including:

- academic subject teachers
- area business and industrial employers
- board of education
- community groups and local education institutions (secondary and postsecondary) offering vocational education programs
- district administrators
- organized labor
- parents of vocational education students
- regional educational service center
- vocational education advisory committee
- vocational education teachers
- vocational student organizations

The committee's chairperson should be designated by the person who appoints members.

Contributions from member groups can be significant. Representatives of organized labor, business and industry, for example, can provide helpful information about needs and expectations in the marketplace as well as about program

and course content, equipment and facility needs. Another benefit of broadly representative committee membership is that participation can help insure widespread support and assistance when the curriculum is implemented.

The committee should be responsible for coordinating development of a recommended curriculum (based in large part on the work of the subject area subcommittees described below) to be submitted to the board of education for approval. To complete its assignment the committee will undertake the following activities:

- develop a philosophy for vocational education;
- develop broad program goals;
- conduct a needs assessment;
- appoint subcommittees to review, revise or develop specific curricula for each subject area offered;
- review work of subcommittees;
- assist with evaluation, and
- revise curriculum as needed.

Subject area subcommittees

In all but the smallest districts, it will be necessary to form subcommittees for each subject area offered.

Every subcommittee should include teachers and students in the vocational area, academic subject teachers as well as employers and, if possible, persons employed in the occupational field. For subjects that are already being offered, it is recommended that subject area department heads chair the subcommittees. Members of the overall curriculum committee may serve on subcommittees and, in fact, having at least one member who fully understands the overall philosophy and goals can prove helpful.

Each subcommittee should be responsible for developing a subject area curriculum for review by the vocational education curriculum committee. Subcommittee activities may include the following:

- develop philosophy;
- identify subject area goals;
- develop skill and course sequences;
- conduct task analyses
- establish subject area objectives and student performance objectives for each course in sequence;
- develop course outlines;
- establish criteria for student selection and recruitment;
- assist in developing facility specifications;
- suggest materials and equipment needed;
- assist with faculty orientation and in-service training if needed;
- assist area curriculum field test, and
- revise curriculum as needed.

Resources for local planners

The vocational education curriculum committee and its subcommittees can draw upon many resources to assist in their work. Seeking background information at the beginning of the project is advised because such information can prevent time-consuming efforts to reinvent the wheel.

As noted the Connecticut State Department of Education's *Guide to Curriculum Development: Purposes, Practices and Procedures* and especially Chapter 4, "Organizing for Subject Area Development," can provide an excellent orientation to the process of curriculum development. The department can also furnish guides for specific vocational education content areas (see also Chapter 9).

The committee may also find it helpful to review *Curriculum Development in Vocational and Technical Education* by Curtis R. Finch and John R. Crunkilton (Boston: Allyn and Bacon, Inc., 1979) which is one of the most recent and extensive publications on the topic. It is likely that school district libraries and regional educational service centers (listed in Appendix C) as well as college and university libraries will also contain pertinent publications.

In addition, the committee may wish to obtain information from one or more of a number of national vocational education organizations that can provide materials about curriculum and curriculum development. Sources of information are found in Appendix F.

A Framework for Vocational Education 5

The overall district curriculum is the sum total of the vocational subject areas and their separate curricula. An effective curriculum, however, is more than simply a collection of course offerings. Rather, the course offerings that constitute the curriculum should express a philosophy, follow carefully formulated goals, reflect well defined needs and meet specific objectives. These elements are the framework for the curriculum.

Elements, such as philosophy and goals, must be developed for the district as well as for each subject area. The needs assessment that is so essential to decision making about the district's overall program, will also influence the subject area curricula and the career fields for which students are being prepared.

Specific learning objectives and instructional activities, however, must be defined for each subject area and for the related career fields. The matrix in Table 1, below, shows which elements of curriculum planning should be emphasized in each of the three aspects of curriculum development. The text describes the development of philosophy, goals, needs assessment, and objectives as they apply to each phase.

DISTRICT PHILOSOPHY AND GOALS

A curriculum's philosophy is its rationale; it states the program's purpose and provides guiding principles for establishing goals. Goals are more specific than philosophy and should be consistent with philosophy.

Philosophy

Planners should not be misled by terminology—a statement of philosophy should not be abstract. It should be realistic and relevant.

A district's vocational education philosophy should reflect local needs and resources and be consistent with the State Board of Education's philosophy. The board has adopted a formal position on vocational education; salient points are outlined as follows.

Vocational education

- [is concerned with] the well-being of people with a focus on their occupational life;
- is concerned with the total individual, his/her cultural growth and citizenship;
- prepares students for existing occupational needs or identifiable future needs;
- is planned and conducted in close cooperation with business, industry, labor and the educational community;
- requires that its programs have a body of related and general education curriculum offerings that are closely tied to the practical instruction of the skills areas, and
- seeks to insure that all persons of all ages in all communities in the state will have access to education which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment and which is suited to their needs, interests and abilities to benefit from such education.

Table 1
Vocational Education Curriculum Elements

	Philosophy	Goals	Needs Assessment	Objectives	Instructional Activities
District curriculum	X	X	X		
Subject area(s)	X	X	X	X	X
Career fields			X	X	X

In developing its own philosophy statement a district can draw upon Board of Education principles, or examples from other states and districts. A district philosophy statement might read as follows:

> Vocational education is a primary responsibility of public education. Its purpose is to prepare individuals for the many roles of adult life—family member, citizen and wage earner.
>
> In addition to educating for competency in the basic skills of reading, writing and computation, the school district will provide instruction in occupational skills for students who wish to obtain gainful employment upon high school graduation, as well as vocational education experiences for those who plan on post-secondary education.
>
> Programs will be responsive to the needs of the economy and reflect new technologies and occupational opportunities. Business, industry and labor, community organizations and educational institutions should be encouraged to participate actively in planning and conducting vocational education programs.
>
> The district will encourage special populations to participate in vocational education and will offer programs tailored to their unique needs.

Goals

Using the district's vocational education philosophy, the curriculum committee should next develop statements that express program goals. Goals are statements about expected program outcomes and serve to give direction for the development of more detailed objectives. A district's vocational education goals should be compatible with the statewide goals for education (see Appendix A) and might include the following:

Vocational education will

- help individuals to become productive members of society with gainful employment and to live satisfying personal lives;
- provide students, through classroom experiences and vocational student organizations, with knowledge, skills and attitudes necessary to obtain satisfying work and to participate as members of their families and communities;
- contribute to economic strength and growth by providing localities, the state and the nation with trained workers;
- provide courses to prepare students for gainful employment in occupational areas where opportunities exist;
- reduce unemployment and underemployment caused by lack of training and education;
- offer training for adults and out-of-school youth who lack basic occupational skills and retraining for adults displaced by changes in the economy;
- encourage students who might otherwise drop out of high school to continue their high school education by offering programs relevant to their goal of gainful employment following graduation;

- use vocational guidance and counseling to make students aware of programs that provide preparation for employment following high school;
- seek to discourage sex stereotyping and encourage special populations to participate in vocational education, and
- encourage all students, and especially special populations, through guidance, counseling, and classroom experiences, to consider the opportunities offered through vocational education.

NEEDS ASSESSMENT

An effective vocational education curriculum is based on identifiable student and community needs and is structured to meet employment opportunities. Therefore, conducting a needs assessment is one of the first tasks the vocational education curriculum committee must undertake. Key elements in a vocational education needs assessment are labor demand, labor supply, student interest or need, and analysis of these elements. Planners who seek more detailed information will find assistance in Finch and Crunkilton's *Curriculum Development in Vocational Technical Education* which gives in-depth coverage of needs assessment in Chapters 2, 3 and 4. For other resources relating to needs assessment, see Appendix F, page 74.

Labor demand

It is important to determine what job opportunities will be available to graduates of vocational programs. Because of the small geographic size of Connecticut and historical patterns of worker mobility and commuting, compilation of job projections should be made on a statewide level. In larger districts it may be possible to focus also on the local labor market.

When collecting this data, planners should obtain information about current and projected job opportunities. The task of forecasting labor market needs is not simple. Many factors contribute to estimates of projected employment, but the expected number of job openings and the supply of workers available to fill those jobs are key factors. Experts in the field point out:

> ...The period over which we can usefully forecast the demand for manpower in the present state of knowledge is much more limited than is usually admitted. All the evidence shows that we do not yet know how to forecast beyond three or four years with anything remotely resembling the 10 percent margin of errors that is regarded as just tolerable in general economic forecasting.[1]

Curriculum planners are advised to keep this judgment in mind when collecting and analyzing labor market data. The accuracy of long-term projections may be questionable and this fact should be taken into consideration when, for example, projections call for programs that require substantial capital investment.

Fortunately, since doing the job from scratch is so complicated, there are many sources from which labor market information can be drawn.

Annual and five-year occupational projections are published by the Connecticut State Labor Department. State Job Service offices also have relevant information. Each year the Division of Vocational and Adult Education analyzes these state projections and adds an estimate of the number of individuals anticipated to complete vocational and employment training programs in areas where labor demand is projected. "Employment Opportunities Related to Vocational Education Programs" is published annually as part of Connecticut's Annual Plan for the Administration of P.L. 94-482. This statewide information should be supplemented with regional and local data as needed. Before conducting local surveys, it is suggested the State Occupational Information Coordinating Committee (SOICC) be contacted for assistance in determining what labor market data can be collected and how to conduct surveys.

In addition to information on long- and short-term projected job opportunities, specific occupational information is needed to determine curriculum goals and objectives. Information of this type includes description of job duties, and entry-level skill requirements. General descriptions of job duties and requirements are found in the *Dictionary of Occupational Titles* and in the *Annual Occupational Outlook Handbook* published by the U.S. Department of Labor.

Curriculum planners should give special attention to new and changing occupations to insure that curricula are consistent with changing business and industry requirements. In some cases it may be necessary to conduct task analyses to determine exactly what skills are involved in new job titles. Direct involvement of employers and labor organizations is recommended to verify current Connecticut job requirements.

Labor supply

Identifying the supply of workers expected to be available to fill jobs is also a key element of vocational education needs assessment. Students who complete vocational programs in public and private schools represent only one component of occupational supply. Others which must be included are students completing other comparable programs sponsored by industry and community-based training programs, those currently unemployed but trained in the occupational area as well as those employed in related jobs who may transfer or be promoted.

An important aspect of assessing labor supply is verifying current data on both local and regional vocational programs and the approximate number of students who complete programs annually. Types of information about vocational education programs that should be reviewed are:

cooperative activities existing in region;
current and projected enrollment;
current program descriptions (number and sequence of courses);
institutions providing vocational education;
occupation(s) for which program trains, and
student follow-up data (placement rates, wages, etc.).

Consideration should also be given to programs providing training for the same occupation at different levels. For example, a community college and a local

high school may both offer a program in accounting, but a student who completes the high school program would generally find entry-level employment as a bookkeeper, while a community college graduate would be qualified for a higher level accounting position.

Data available on labor supply and demand are classified by using standardized coding systems. The Department of Labor, the source of much labor demand data, utilizes the *Dictionary of Occupational Titles* (DOT) coding. Supply is generally available using U.S. Department of Education *Classification of Instructional Program* codes. Supply and demand data can be compared using available "crosswalks" between the coding systems.

Labor supply and demand data are available from the sources listed below.

State sources

Department of Education (SDE)
Department of Labor (DOL)
Office of Policy and Management (OPM)
State Council on Education for Employment (SCEE)
State Occupational Information Coordinating Committee (SOICC)

Local sources

Business/Industry (including prime sponsors of training programs, private industry councils [PICs], education work councils)
City/Municipal job training programs
Community-Based Organizations
Education (local education agencies [LEAs], regional vocational-technical schools)
Job Service (local offices)
Organized Labor
Regional educational service centers (RESCs)

Student Interest

The identification of student interest in pursuing various careers and occupational training programs is also an important element in conducting a needs assessment. Student interest is a vital component to successful school programming.

Information on student interests can be obtained from guidance interviews, course registrations and/or interest inventories. Surveys available include the sample provided in Appendix H, the Kuder General Interest Survey, and the Ohio Vocational Interest Survey.

General trends in student interest can also be assessed from reviewing data on numbers of students enrolled in specific courses or programs over a five- or seven-year period. Trends in numbers of students applying to and attending regional vocational technical schools can also indicate student interest in trade and technical programs. Postsecondary program enrollments and participation in

private occupational school programs also will provide insights into unmet needs. Much of this enrollment data is compiled annually by most school districts. Each year districts report course and program enrollment data, graduate follow-up statistics and applications to regional vocational-technical schools to the Division of Vocational and Adult Education.

Needs analysis

Once data are gathered, the committee can analyze and evaluate the information and develop priorities for local programs and curriculum development consistent with expected job opportunities and student interest.

A matching of labor supply and demand with instructional programs will identify occupational areas in which significant job opportunities are expected but for which the supply of skilled workers is small. Then existing programs in the occupational area should be reviewed and, if no program exists and there is student interest, new programs should be considered.

As part of this process, each existing program should be reviewed to determine whether it should be continued as is; modified to adapt to new technologies or changing entry-level requirements; expanded; or, if the skills are no longer in demand, eliminated. Thus, the product of the vocational education needs assessment is a listing of changes needed, if any, to existing programs and the identification of potential new program areas to be added to the district's curriculum.

SUBJECT AREA PHILOSOPHY, GOALS AND OBJECTIVES

Philosophy statements for subject areas should be consistent with the district's philosophy.

A sample subject area philosophy statement is provided in Appendix J. The opening paragraph of the statement gives the flavor of what a subject area philosophy statement should be like:

> Business education makes a significant contribution to general education in a business-oriented society where everyone needs a high degree of economic literacy. Business education also can provide valuable skills and knowledge for those who plan postsecondary education whether in the field of business or in other areas. However, the prime emphasis of business education in Connecticut is vocationally oriented toward job entry and more advanced positions for those students who desire careers in business.

Goals

Goals for specific subject areas will be similar—though more specific—to district goals. For example, the specialists in the State Department of Education suggest the following goals for industrial arts education.

- Develop an insight and understanding of industry and its place in our culture.
- Discover and develop talent, aptitudes, interests and potentialities of individuals for the technical pursuits and the applied sciences.
- Develop an understanding of industrial processes and the practical application of scientific principles.
- Develop basic skills in the proper use of common industrial tools, machines and processes.

Objectives

The care and skill with which subject area and career field objectives are developed will influence the success of the district's vocational education program. Specific, measurable objectives also facilitate evaluation (see Chapter 7).

Learning objectives are best expressed in terms of student behaviors. Care should be taken to include cognitive (intellectual), affective (emotional) and psychomotor (physical) types of behavior to insure that the curriculum addresses all facets of the individual. The following is a sample of objectives for business education taken from the State Department of Education's curriculum guide for business education.

Vocational objectives

- Provide competent workers with technical skills, ethics, knowledge and attitudes necessary for success in business and to meet state, local and national needs.
- Explore jobs related to students' vocational choices for increased knowledge and vocational competence.
- Acquaint students with various types of business positions consistent with students' interests, capabilities, knowledges, and skills.
- Develop an understanding of employment opportunities to include the advantages and disadvantages of various kinds of business work.
- Develop an appreciation for the role of business in a democratic society.
- Give attention to personality growth so that a foundation for good interpersonal relationships may be established.
- Show the necessity and means to cope with rapid change in business occupations, and from analysis of these changes foster some ability to discern trends for future employment patterns.
- Foster constructive attitudes toward self-education and advancement.
- Foster self-respect and pride in what students are able to achieve in business.

General education objectives

- Recognize the relative merits and shortcomings of various economic systems with concentration on the American system of business enterprise.
- Give students a system of value clarification and analysis so that they make sound moral, rational decisions especially as those decisions relate to business.
- Provide students with an understanding and appreciation of the American business system and the goods and services it offers.

- Provide sound concepts of consumerism so that students may consume wisely in a society of shortage.
- Establish appreciation of individual and group civic and social responsibilities in a community.
- Lay the groundwork through guidance for students to understand the world of work.
- Give some understanding of the arts and sciences as they apply to business.
- Provide personal-use skills.

Objectives must also be developed for specializations within the subject areas and for individual courses. A sample of learning outcomes and related instructional activities for one course in each subject area is provided in the content, scope and sequence charts in Chapter 9.

Resources for Vocational Education 6

Effective, high quality vocational education requires adequate funding, staffing, materials, equipment and facilities. A detailed discussion of vocational education funding is beyond the scope of this curriculum guide and is, in any event, the responsibility of district administrators and the local board of education. Curriculum planners can, however, assist district administrators by identifying opportunities for cooperative efforts—between schools and business, industry and labor, or among educational institutions—as a means to realize cost-effective programs. Cooperative efforts are described in the first section of this chapter. The other three sections focus on equipment and facilities, materials and staff.

Interdistrict efforts

When vocational education planners search for resources, they should look beyond their own school districts. A district need not, and perhaps in some cases cannot, provide a total vocational education curriculum independently. Through cooperative efforts, however, the curriculum can be expanded—both quantitatively and qualitatively—beyond what the district could provide on its own.

Two major types of cooperation are common in vocational education: (1) cooperation between or among school districts and (2) cooperation between schools and business, industry and labor organizations. Among the possibilities for joint district action are transporting students to shop or laboratory facilities not available in their own schools or having teachers commute to schools. Another example is the Regional Vocational Agriculture Centers (see Appendix E, page 70).

Cooperative programs have operated successfully in many Connecticut school districts. For example, in one of the state's largest cities, local businesses have "adopted" high schools. Many of the state's largest employers participate in cooperative work education programs that involve a number of school districts. In one such program, the company sought to provide on-the-job training, geared to its own employment needs, to high school seniors enrolled in state-approved cooperative work education-diversified occupations programs. As part of this program, schools provide in-school instruction in areas identified by the company. In addition to providing on-the-job training, the company paid the students and cooperated with school staff in joint supervisor-teacher evaluation of students.

Another cooperative work education program brought together a number of districts who separately did not have the resources to offer marketing and distributive education. This program gave students the opportunity to participate in a program utilizing the resources of a regional shopping mall. In this program, students spent one and one-half hours each day at the mall studying marketing and distributive education in an actual work environment.

Equipment and facilities

Vocational education usually requires more specialized equipment and facilities than academic subjects. Up-to-date equipment is vital if students are to be well prepared for current and future jobs. For vocational education, equipment and facilities for programs offered should duplicate workplace settings. When this is not feasible, then arrangements should be made for on-site training in the workplace.

Local business and industry can assist vocational education programs by providing, through loan or donation, up-to-date equipment. Members of the local advisory council on vocational education can, in many cases, be a good source of information about the kinds of equipment used in area business and industry. State Department of Education consultants for each vocational education subject area can provide assistance in determining equipment needs.

As the curriculum committee designs or revises programs, it must estimate the space needs for new offerings and projected enrollments for traditional offerings. The State Department of Education has established requirements for space allocations for some specific programs. The committee should consult the School Facilities Unit about these standards.

Materials

Curriculum materials are tangible resources that assist in instruction and learning. Some materials are designed for use by teachers, while others are for students. A wide variety of materials is available for vocational education; materials may be classified generally as follows:

printed matter: textbooks, manuals, study guides, workbooks, reference books, pamphlets, newspaper and magazine articles

audiovisual materials: pictures, graphics, posters, audiotapes, records, films, transparencies, filmstrips, slides and videotapes

manipulative aids: puzzles, games, specimens, learning kits, experiments and simulations[2]

The curriculum committee cannot select the materials needed for the vocational education program. What the committee can do, however, is to establish guidelines or criteria for selecting curriculum materials. Some suggested criteria are included in the section "Choosing instructional materials," in Chapter 4 of *A Guide to Curriculum Development: Purposes, Practices and Procedures.* In selecting materials it is imperative to keep in mind that vocational education courses must keep pace with rapidly changing technology. For this reason, teachers who are most knowledgeable and up-to-date in the field should probably be the primary source for identifying new materials and judging the continuing usefulness—particularly in terms of being current—of materials.

Vocational education curriculum materials are available from many sources; as many sources as possible should be investigated. Major sources include:

Commercial publishers. Commercial publishers print materials for both student and teacher use. Some publishers may specialize in one or more subject area fields. The major drawbacks to textbooks are that they may become out-of-date in a relatively short period of time and are expensive to replace.

Journals and magazines. Unlike textbooks, journals and magazines are excellent sources of up-to-the-minute information and subscriptions are relatively inexpensive.

Curriculum centers. National and regional centers that focus on research and development in the area of vocational education frequently have materials available at low cost and can provide useful information about other sources. Some of these centers are noted on page 105.

State education agencies. The Connecticut State Department of Education can provide a number of publications to assist in the development of materials. In addition, consultants for specific subject areas can offer information and guidance about curriculum materials.

Federal agencies. Many publications available from the Department of Education, Department of Defense and the U.S. Government Printing Office have application for vocational education instruction. Some of these may be more helpful to teachers than to students because of the reading or technical level. For a catalog of publications write: U.S. Government Printing Office, Washington, DC 20402.

Business and industry. Many companies have materials suitable for use in vocational education courses and will provide them free of charge. Although some of these materials will emphasize company products or services they can be useful. Local and national sources should be investigated.[3]

Staffing

Staff for vocational education includes not only instructors for various courses, but also administrators and professional, paraprofessional and clerical support personnel. Obviously, curriculum planners cannot select staff. Their role is to make recommendations concerning staff needs, to identify new courses which will require new teachers, or expanded enrollments in current programs that may necessitate hiring additional teachers. When administrators and/or the board of education have decided to hire additional personnel, members of the curriculum committee and its subcommittees can make valuable contributions to search committees.

Administrators. At a minimum, administrative support for vocational education should include a vocational education coordinator. School districts of limited size may need to assign the duties of vocational education program coordination to an assistant superintendent, a department head, or a school principal, though the latter is not recommended except for the smallest districts.

Duties of the coordinator should include

- developing an annual budget for vocational education;
- coordinating cooperative work education programs;
- overseeing public relations activities within the school system and between the schools and the local community;
- working with the local advisory council on vocational education in meeting requirements of state and federal law;
- providing liaison with business, industry and organized labor, and
- maintaining relationships with state and federal agencies, community groups and educational institutions involved in vocational education.

When the role of the vocational education coordinator is fully developed, this person may be in charge of vocational curriculum development or revision.

Important too is administrative support from subject area department heads. In curriculum development, chairpersons can, as noted, direct the work of subject area curriculum subcommittees.

Professional support personnel. Guidance counselors who are well acquainted with vocational education are essential. Some districts will choose to assign guidance personnel specifically to vocational guidance, while others will prefer that all guidance personnel be knowledgeable about vocational education. Additional support personnel skilled in remedial or special education may also be necessary to meet student needs.

Teachers. No element is more important in the success of vocational education than the quality of the instructional staff. Vocational education teachers must not only be capable of teaching the theoretical aspects of subject matter, but should also be able to impart information about the subject's practical application based on their own work experience in the contemporary work world. In addition, vocational education teachers also serve to counsel individual students and frequently serve a most important role as advisers to vocational student organizations. Because of the unique combination of talents required for teaching voca-

tional education, state certification requirements for vocational education are very specific and quite rigorous. (Certification requirements are provided in Appendix I.) The specificity of certification requirements means that vocational education teachers must sometimes be recruited from nontraditional sources.

Evaluation 7

Evaluation is one of the most important aspects of curriculum development. The curriculum committee should establish a process for determining whether or not the curriculum is fulfilling its intended purposes. Evaluation not only provides information about the success or failure of current programs, but also—and perhaps more importantly—is a source of data for future planning efforts.

Many school systems have well-established mechanisms for various types of evaluation. Student testing and teacher evaluation are examples of commonly used evaluations. The two types of evaluation discussed in this chapter, program and student evaluation, focus on some special aspects of evaluation in vocational education.

Program evaluation

To determine effectiveness in meeting stated goals and objectives, vocational education programs must be evaluated on a regular schedule. New programs should be evaluated continuously during the first full year of operation; ongoing programs should be evaluated on a schedule that insures the program is meeting established objectives.

Evaluation should measure, to the degree possible in quantifiable terms, the following aspects of the vocational educational program:

- quality and availability of program offerings;
- guidance, counseling, placement and follow-up services;
- capacity and condition of facilities and equipment;
- employer participation;
- teacher/pupil ratios, and
- teacher qualifications.

Information about these aspects of the vocational education program can be determined through a number of standard measurement and evaluation methods.

When designing evaluation instruments for both process and product evaluations, curriculum planners can seek assistance in designing evaluation instruments such as surveys from specialists in their own districts, from State Department of Education personnel, or from nearby colleges and universities. Finally, it should be noted that the more specific the objectives developed earlier in the curriculum development process, the easier the job of measuring success or failure with evaluation procedures.

Another measure of program (as well as student) success is the employment record of graduates. Statistical data on students completing federally aided vocational programs is collected each year by the State Department of Education and published in a report entitled *Graduate Follow-up*. Information is given by program by school on the numbers of graduates continuing their training, employed in related and unrelated occupations, part-time and full-time, and the average hourly wage rates being earned. Evaluators may find it valuable also to gather data on programs that are locally funded, and on duration of employment and employer satisfaction with the performance of vocational education graduates compared to persons without similar experience.

Student evaluation

Some elements of evaluating student performance in vocational education classes are similar to evaluating performance in other classes. For example, any of the following common evaluation techniques can be used in vocational education:

- teacher-constructed tests, both objective and essay
- standardized tests from publishers or testing organizations
- oral evaluations such as discussions, presentations, tape recordings and checklists

For vocational education typical testing methods may not be valid in assessing student achievement in many vocational courses. Many vocational education courses involve student performance either in an actual job setting or in a classroom which simulates a work environment. For these courses, testing should assess student mastery of actual tasks. This method of evaluation not only reinforces occupational training, but also prepares students for the kind of evaluation they will experience in work situations.

Even more than in the case of program evaluation, the careful development of objectives can facilitate student evaluation. Many of these objectives, especially for individual courses, should be measurable objectives and frequently quantifiable. Performance objectives are a measurement of a student's ability to follow a specific procedure or sequence of steps and do not focus exclusively on the quality of the end product, though quality may be evaluated in some cases.

One device commonly employed in vocational education evaluation of student performance is the rating scale. The rating scale lists various steps in performing a particular task. To the right of each step is a scale or continuum which indicates varying levels of achievement from not at all to superior. The instructor or evaluator then checks the degree of performance observed. When a rating scale is properly constructed, the evaluator's checks can be connected

linearly to show student performance in graphic fashion. Students viewing the graphs can easily see how well they are doing. Checklists can also be utilized for evaluating student skill or task performance. The various steps in a particular task or the important items involved in a procedure are listed and the evaluator checks a box to indicate whether or not the student has performed each step.

Product models are another possible evaluation technique. The technique involves a carefully selected series of products representing differing levels of quality, identified by numbers or letters, arranged in order from inferior to superior quality. As a student produces a product, it is compared to the models and is assigned the letter or number of the model it most closely resembles. This method standardizes evaluation for objective judgments of individual performance.

One unique feature of vocational education is that supervisors in a job setting often participate in evaluation. In some cases, e.g., cooperative work education, supervisors may be the primary evaluators. The classroom teachers and the supervisors consult about the students and decide on their evaluation.

Part III

Curriculum Content

Stages of Vocational Education Development 8

Every effective curriculum is a *planned, logical sequence* of courses. Sequencing of courses is based on theories of learning psychology and child development.

Curriculum developers in the field of career education have identified five stages of career development which outline the fundamental characteristics of career education from kindergarten through adulthood. Similar and complementary stages have been identified for vocational education. A comparison of the career and vocational education development stages is shown in Table 2. At the elementary school level, vocational education concepts are provided through mandated career education programs. In grades 7–12, there are five stages of vocational education development. These stages, or levels, are discussed in this chapter.

Stage I: Exploration

The exploratory stage in grades 7 and 8 emphasizes introductory information and exploratory activities. Students should be provided with realistic and accurate information about a broad range of occupations and be encouraged to think about work, to form tentative career goals, and explore many occupational clusters.

Students can be introduced to skill concepts, education requirements, promotional opportunities for various occupations.

Through aptitude testing or self interest inventories, students should be encouraged to narrow their exploratory activities to two or three of the 15 occupational clusters defined in *A Guide to Curriculum Development in Career Education.*

One critical aspect of this stage of vocational education development is to discourage sex stereotyping in career choice and to encourage all students including the college-bound, gifted and talented, handicapped, minorities and disadvantaged students to consider vocational education.

Stage II: Introductory Skill Development and Occupational Orientation

In grades 9 and 10 basic occupational skill development activities are added to exploratory exercises. At this stage occupational goals are still tentative and consideration of options should be encouraged. Students should be provided with opportunities for hands-on experiences and laboratory/shop experiences. The skills developed at this stage can have two applications: (1) students begin to learn skills that can be used in an occupation and (2) skills can be applied in everyday life for practical or avocational pursuits.

Each vocational education subject area offers specific courses for this phase. These are identified in the subject area content, scope and sequence charts in Chapter 9.

Stage III: Advanced Skill Development

In grades 11 and 12 vocational students begin the development of the skills necessary for entry-level positions, or for advanced training in postsecondary education. These skills may be either specific to a vocational area or generic to an occupational cluster.

In developing curriculum for the advanced skill stage, care should be taken to insure scheduling adequate periods of time, such as double periods, for instruction. Instruction may include operation and care of equipment, safety procedures, and relevant laws and regulations.

Cooperative work education should be introduced as a program component at this level. Also, the curriculum must include courses in communication, mathe-

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Table 2
Comparison of Stages
Vocational Education and Career Education

Grades	Stages of Career Education	Grades	Stages of Vocational Education
Pre-K– 2	Awareness	Pre-K– 2	Awareness
3– 6	Orientation	3– 6	Orientation
7–10	Exploration	7– 9	I Exploration
		9–10	II Introductory Skill Development and/or Occupational Orientation
11,12	Preparation	11,12	III Advanced Skill Development and/or IV Job-Specific Skill Development
13–on	Placement and Advancement	13–on	V Job Entry/Adult or Continuing Education

matics, and employability skills. Examples of the latter are: job-seeking skills, interpersonal relationships on the job, handling conflicts, punctuality, dependability and similar requisites for successful employment.

Charts in Chapter 9 identify courses that can be offered in each subject area for the advanced skill development stage.

Stage IV: Job-Specific Skill Development

Job-specific skill development can be introduced in grades 11 or 12. Instruction at this stage provides training in very specific job skills. In some cases, advanced skill development courses will be prerequisites for job-specific courses. Students may, however, move directly from introductory courses to specializations.

As with "advanced skill development," students taking job-specific courses should also be given communication, mathematics and related instruction to enhance employability skills, as well as opportunities for on-the-job training.

Stage V: Job Entry/Adult and Continuing Education

At every level vocational education students should be made aware of opportunities for postsecondary training at community colleges, technical colleges, proprietary schools, and four-year colleges as well as opportunities for on-the-job training and apprenticeship programs. Guidance personnel and vocational teachers should insure that information about these options is included as a part of each course.

Curriculum planners should also work with vocational education advisory councils, business, industry and organized labor to expand vocational education training opportunities for out-of-school youth and adults.

Content, Scope and Sequence 9

The heart of the curriculum development process is determining instructional program content, scope and sequence. The instructional program is the means by which vocational education's goals and objectives are carried out.

The Illinois State Board of Education, in a pamphlet titled "Planning Vocational Programs—An Overview of the Context and Process," provides a good summary of some critical aspects of program design:

> [There are] several general considerations that should prevail. These include: 1) developing a logical sequence of learning experiences and courses, 2) providing for efficient articulation and coordinating with other existing programs, 3) insuring the program is delivered to all potential students in an equitable way, and 4) designing instruction so that it allows for the special needs of students. In addition, design of programs should include consideration of the use of cooperative community-based instructional arrangements and student organizations as integral parts of the vocational programs.

To illustrate what is involved, *A Guide to Curriculum Development in Vocational Education* presents on the pages which follow a brief description of each of the seven major subject areas that usually comprise a vocational education program. The accompanying charts show the sequence of courses (by title) within each area and an example (blow-up) of one course showing some of the student objectives for the course and examples of activities through which a student may achieve the objectives. A complete curriculum in each of the six subject areas will contain all the specific learning objectives and related activities for the courses in that subject area/field. Home economics is divided into consumer and occupational programs.

Prevocational courses, which are prerequisites for all vocational education subjects and which are offered in the middle/junior high school, are not detailed in the scope and sequence charts. They include basic mathematics, science, language arts and career exploration courses. When possible these courses should be oriented toward the skills that will be needed in the specific subject area students are exploring and considering for future study. Examples are given, within the trade and industrial area, of machine-related mathematics and machine-related blueprint reading.

Time allotments

High quality vocational education requires adequate instructional time allotments. The recommended time varies from course to course, but often requires scheduling over several consecutive periods or on consecutive days. At the advanced and job-specific levels of instruction, particularly, blocks of time that are longer than normal class periods may be required.

Table 3 shows suggested time allotments for the vocational subject areas described in the content, scope and sequence charts which follow. These time allotments are recommendations only. A district may choose among a number of possible ways to meet its instructional goals. For example, the 400 hours on-the-job training recommended for distributive education may be provided on a weekly basis throughout the year or concentrated in blocks of time such as alternating six-week work periods.

Summary

The diversity and complexity of a total vocational education program is only suggested in the scope and sequence charts. Each course within each subject area must be expanded and given the curricular detail indicated by the examples.

Curriculum planners also need to keep in mind that most aspects of the vocational education curriculum may look quite different in five or ten years from the examples shown. The illustrations represent what exists today and tend to be traditional in nature. As changes in the content and approach take place, however, many of the new subject areas will be composed of skills that are now being taught but which may be adapted or grouped into new configurations to fit the job-training needs of the future.

Table 3
Time Allotments

	Per Day		Per Week		Per Year
	Periods	Hours	Periods	Hours	Hours
Business and Office Education	2				
CWE/OJT				15	
Consumer Home Economics			5		
Cooperative Work Education/ Diversified Occupations			3–5		
OJT				20	
Distributive Education			5		
OJT					400
Health Occupations					
Didactic					120
Clinical					60
Industrial Arts					
Grades 7– 8					60
Grades 9–12				3¾	
Occupational Home Economics	2*				210
CWE		3–5			
OJT				15	
Trade and Industrial		2*			

OJT = On-the-Job Training
CWE = Cooperative Work Education
* = Consecutive

Business and Office Education

Business and office education (BOE) is a program which contributes to education in a business-oriented society where *everyone* needs an understanding of the free-enterprise system, keyboarding skills, consumer skills, and a positive work ethic.

Business and office education programs provide the skills and knowledge

- for those pursuing entry-level positions leading to careers in business directly upon graduation from high school;
- for those who plan postsecondary education at both the two- and four-year level in community colleges, proprietary schools, and colleges and universities, and
- for those who seek survival skills.

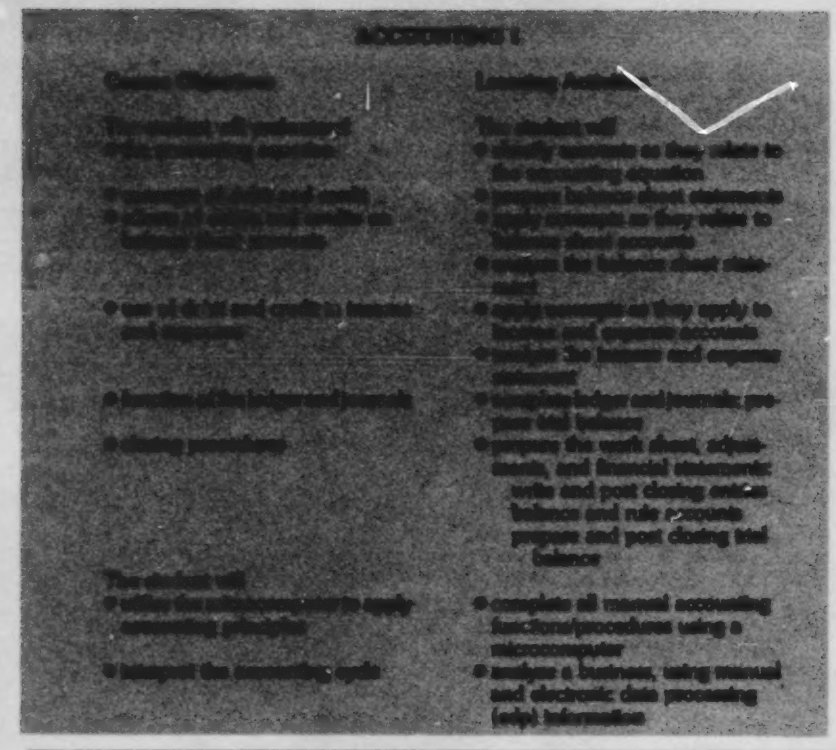
A vital component of business and office education is the CWE/BOE capstone experience. This experience brings together and reinforces skills and knowledge learned in the classroom and reinforces the need for a positive work ethic.

Future Business Leaders of America (FBLA) activities are considered an integral part of the total business and office education program.

Table 4
Sequence of Courses
Business and Office Education

Career Objective/ Field	Grade 9
Accounting/ Data Processing	BUSINESS DYNAMICS BUSINESS MATHEMATICS BUSINESS COMMUNICATIONS INFORMATION PROCESSING I
Secretary	BUSINESS DYNAMICS BUSINESS MATHEMATICS BUSINESS COMMUNICATIONS INFORMATION PROCESSING I
Administrative Support/General Office	BUSINESS DYNAMICS BUSINESS MATHEMATICS BUSINESS COMMUNICATIONS INFORMATION PROCESSING I
College Bound	BUSINESS DYNAMICS KEYBOARDING

Courses in CAPS are REQUIRED.



10	11	12
ACCOUNTING I	ACCOUNTING II DATA PROCESSING	ACCOUNTING/DATA PROCESSING BUSINESS ADMINISTRATION LAW/ECONOMICS COOPERATIVE WORK EDUCATION/ BUSINESS OFFICE EDUCATION
BUSINESS MACHINES		
NOTETAKING INFORMATION PROCESSING II	ADVANCED NOTE- TAKING ACCOUNTING I	OFFICE PROCEDURES BUSINESS ADMINISTRATION COOPERATIVE WORK EDUCATION/ BUSINESS OFFICE EDUCATION
CONSUMER ECONOMICS BUSINESS MACHINES INFORMATION PROCESSING II	ACCOUNTING I SIMULATION	OFFICE PROCEDURES COOPERATIVE WORK EDUCATION/ BUSINESS OFFICE EDUCATION
ACCOUNTING I NOTETAKING	ACCOUNTING II DATA PROCESSING	ACCOUNTING/DATA PROCESSING BUSINESS ADMINISTRATION LAW/ECONOMICS

Health Occupations

The program in health occupations education is designed to assist students in making informed and meaningful career choices in the field of health occupations. It also equips students with the knowledge, attitudes, and skills necessary for employment at the assistant or technician level. Students in these programs participate in both classroom learning experiences and clinical learning experiences outside the school. Close ties with local or regional health facilities are required.

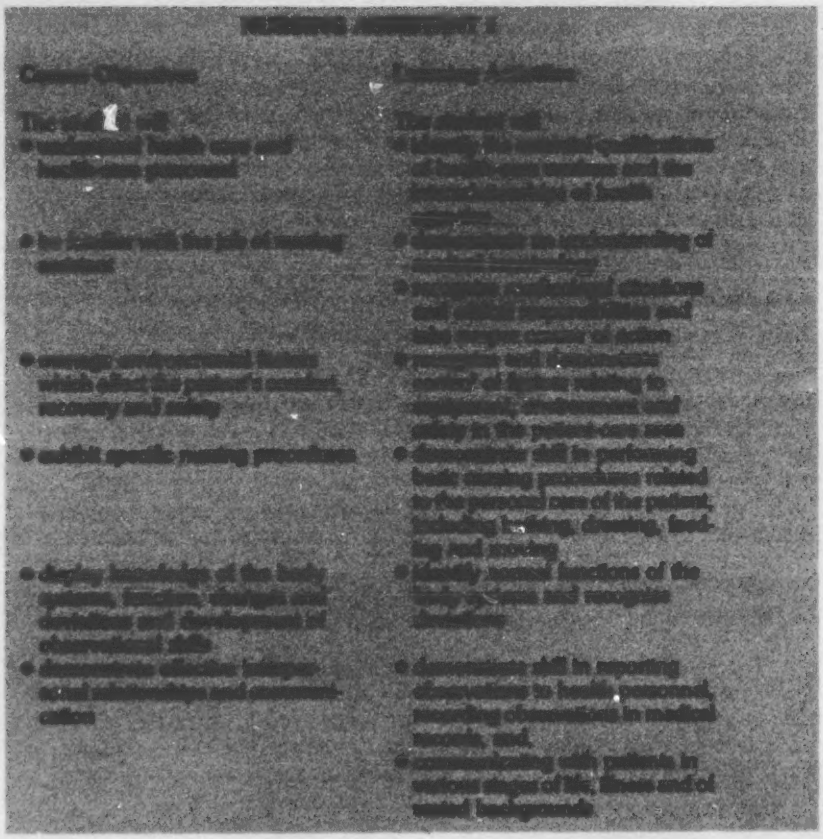
The classroom instructional phase of this program is taught over the course of one year. The clinical phase accompanies this program and allows students to practice what they have learned in actual health-care settings.

Vocational Industrial Clubs of America (VICA) activities are considered an integral part of the total health occupations program.

Table 4, continued
Sequence of Courses
Health Occupations

Career Objective/ Field	Grade 9–10
Nurse Assistant	Science (Biology) Mathematics Health Education Health Careers Exploration Food and Nutrition
Lab Technician	General Chemistry Mathematics Health Education Health Careers Exploration
Animal Technician	Biology Mathematics Health Education Health Careers Exploration

Courses in CAPS are REQUIRED. Others are suggested electives.



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NURSING ASSISTANT I

LAB TECHNICIAN I

ANIMAL TECHNICIAN LAB I

12

NURSING ASSISTANT II
or
ALLIED HEALTH PRACTICUM

LAB TECHNICIAN II

ANIMAL TECHNICIAN LAB II

Home Economics Education

Home economics is a vital part of vocational education. There are two distinct programs although both are centered in rendering personal service. The goal of consumer home economics is to prepare students for the multiple roles within the home. The goal of occupational home economics is to prepare students for paid employment in home-related skills. Both are concerned with the cognitive, affective and psychomotor domain.

Consumer home economics

One-and-a-half-million new households will be formed during the 1980s. The members of these households will be confronted with situations for which they may have limited preparation. Consumer home economics (CHE) teaches skills, information and attitudes to enable students to become contributing members of the home, family and community. It includes such topics as clothing and textiles, child care and development, consumer education, career opportunities, family and peer relationships, foods and nutrition, personal health and grooming and management skills. CHE is introduced in the middle and junior high schools and in some systems in the elementary grades. Senior high schools provide in-depth courses in the above subjects. Future Homemakers of America (FHA) chapters are an integral part of the program.

The chart provides a sample sequential program of consumer home economics education at the secondary level. A complete program should offer courses in child development, care and guidance; clothing and textiles; consumer education; family and individual health; family living and parenthood education; food and nutrition; housing, home furnishings and resource management.

Table 4, continued
Sequence of Courses
Consumer Home Economics

Career Objective/ Field	Grade 9
Consumer Home Economics (Skills for Adult Life)	*Comprehensive Consumer Home Economics
	or
	Consumer Education
	Clothing and Textiles I
	Personal and Family Relationships
	Food and Nutrition

*A survey course including three or more course areas

CHILD CARE AND GUIDANCE I

Course Objectives	Learning Activities
The student will	The student will
• understand physical, intellectual, emotional and social needs of young children	• research/debate information from leading authorities on child development
• evaluate growth patterns of young children/ages and stages	• observe and keep log of children of various ages in multiple situations
• develop activities to promote physical, intellectual, and social development of children	• plan, conduct, and evaluate activities for children of various ages to develop effective, cognitive and psychomotor skills
• analyze health and safety needs of the young child	• develop a case study on one child
• study impact of heredity and environment on growth and development	• research and discuss the effects of heredity and environment on lives of young children

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10	11	12
Family/Individual Health	**Child Care and Guidance I**	Comprehensive Consumer Home Economics
Child Development	Clothing Management	Consumer Education
Family Living	Nutrition	Child Care and Guidance II
Clothing and Textiles II	Housing, Interiors and Home Furnishings	Family Living and Parenthood Education
Home Furnishings and Equipment		Independent Living
Consumer Education		

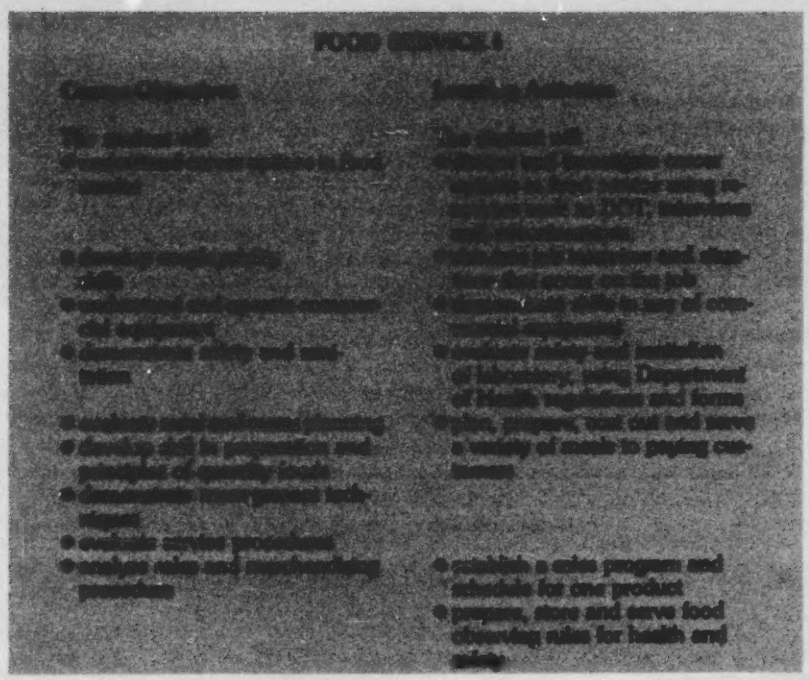
Occupational home economics

Occupational home economics (OHE) prepares students for paid employment in home-related skills. These instructional programs are taught in classrooms and laboratories in the school or community. Subjects included are child care services, clothing services, food services and home health services. OHE is taught at the secondary level. Cooperative work education/home economics (CWE/HE) courses offer coordination of class instruction with related on-the-job experience. Increasingly, assistance with the basic provision of food, clothing and care of family members is being met outside the home. The quality of these services will be largely determined by OHE programs offered in the LEAs. Home-economics-related occupations (HERO) chapters are an integral part of the program.

Table 4, continued
Sequence of Courses
Occupational Home Economics

Career Objective/ Field	Grade 9
Care and Guidance of Children	Consumer Education Food and Nutrition
Clothing and Fabric Management, Production and/or Services	Comprehensive Consumer Home Economics Consumer Education
Food Production Management and/or Services	Consumer Education Food and Nutrition
Home Furnishings and Equipment Management, Production and Services	Clothing and Textiles
Institutional, Home Management and Supporting Services	Comprehensive Consumer Home Economics Family Living and Parenthood

Courses in CAPS are REQUIRED. Others are suggested electives.



10	11–12	12
CHILD DEVELOPMENT Family/Individual Health	CHILD CARE SERVICES I Family Living and Parenthood	CHILD CARE SERVICES II or COOPERATIVE WORK EDUCATION/CARE AND GUIDANCE OF CHILDREN
CONSUMER EDUCATION Clothing and Textiles/ Advanced	CLOTHING SERVICES I Home Furnishings	CLOTHING SERVICES II or COOPERATIVE WORK EDUCATION/ CLOTHING AND FABRIC MANAGEMENT
Family Health Family Living and Parenthood	FOOD SERVICE I Nutrition	FOOD SERVICE II or COOPERATIVE WORK EDUCATION/FOOD PRODUCTION MANAGEMENT
CONSUMER EDUCATION Family Living and Parenthood	HOUSING, HOME FURNISHING AND EQUIPMENT	COOPERATIVE WORK EDUCATION/HOME FURNISHING MANAGEMENT
CONSUMER EDUCATION Family Health	HOUSING, HOME FURNISHINGS Nutrition Family Living/Advanced	COOPERATIVE WORK EDUCATION/ FAMILY AND COMMUNITY SERVICES HOME-HEALTH AIDE

Industrial Arts

Industrial arts is part of the nucleus of vocational education. It provides students an opportunity to learn about the theoretical and practical aspects of industry and technology, two basic elements of our society. It acquaints them with the history, growth, and development as well as materials, products, and processes of industrial organizations. Industrial arts helps develop in students an awareness and appreciation of tools and machines involved in past and present methods of production. It also emphasizes problem-solving experiences to help students become alert contributors and consumers and provides a means by which they can apply in meaningful situations the principles of sciences, mathematics, and other related subjects.

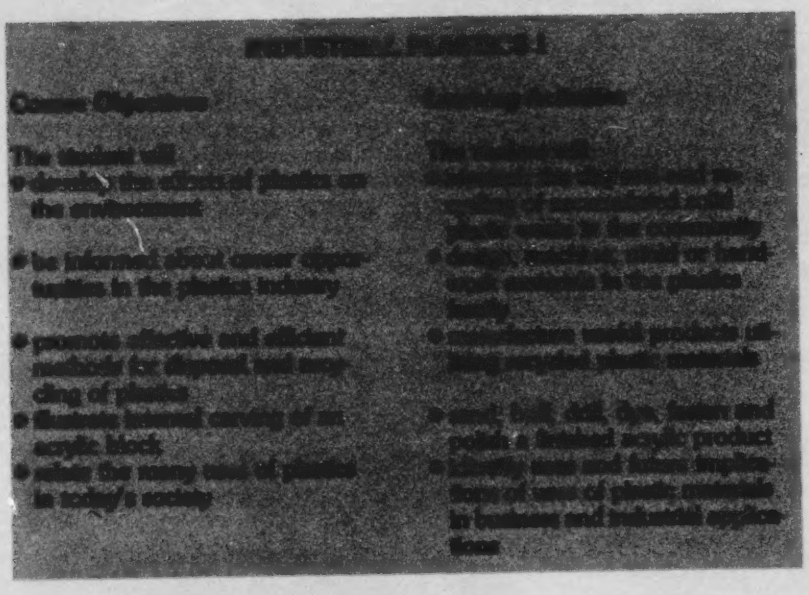
Industrial arts is a study of the broad aspects of industry, such as construction, transportation, communication, manufacturing, and research and development. More specifically, it includes subjects like ceramics, design, drawing, power mechanics, electricity-electronics, graphic arts, leather, lapidary work, metalworking, plastics, textiles, and woodworking. Each of the areas may involve a study of several subareas. For example, metalworking may include opportunities to investigate foundry, welding, machining, sheet metal; wrought iron, and art metal. Many courses are closely related to art department offerings.

Although industrial arts is often referred to as "shop," it is more than that. It is actually a classroom-laboratory combination, providing students with the opportunity to study the materials, processes, products, and related problems of the various areas through such activities as planning, organizing, creating, constructing, experimenting, testing, servicing and evaluating.

Table 4, continued
Sequence of Courses
Industrial Arts

Career Objective/ Field	Grade 9–12
Drafting	Drafting I
Electricity/ Electronics	Electricity I
Graphic Arts	Graphic Arts I
Wood Technology	Wood Technology I
Metal Technology	Metal Technology I
Power Technology	Power Technology I
Plastics Technology	[illegible]
Industrial Ceramics	Industrial Ceramics I

American Industrial Arts Student Association (AIASA) activities are considered an integral part of the total industrial arts program.



10–12	11–12	12
Drafting II	Jig and Fixture Design or Architectural Drafting	Architectural Drafting or Jig and Fixture Design
Electronics I	Electronics II	
Graphic Arts II	Graphic Arts III	Graphic Arts IV
Wood Technology II	Wood Technology III	Wood Technology IV
Metal Technology II	Metal Technology III	Metal Technology IV
Power Technology II	Power Technology III	Power Technology IV
Industrial Plastics II		
Industrial Ceramics II		

Marketing and Distributive Education

Cooperative work education (CWE) in marketing and distributive education is a two year curriculum preparing students in grades 11 and 12 for employment in the various occupations concerned with the distribution, marketing and sale of goods.

These programs utilize a cooperative work approach to on-the-job training (OJT), and include instructional sections concerned with marketing, sales, distribution, merchandising, management and entrepreneurship. Instructional programs prepare students to perform marketing functions such as selling, buying, pricing, promoting, financing, transporting, storing, and market research. In addi-

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Table 4, continued
Sequence of Courses
Marketing and Distributive Education (CWE)

Career Objective/ Field	Grade 9	10
Marketing and Distributive Education	Business Dynamics Business Communications	Accounting I Business Mathematics Information Processing I
Hotel/Motel	Business Dynamics Business Communications	Accounting I Business Mathematics Information Processing I
Visual Merchandising	Business Dynamics Business Communications	Accounting I Business Mathematics Information Processing I

tion, varying emphases on technical knowledge of products or services marketed, related communications and computation skills and abilities and attitudes associated with human relations and free enterprise are taught.

A school store laboratory is an important part of the total program. The school store is operated by the students and should involve all of the problems in operating a small business.

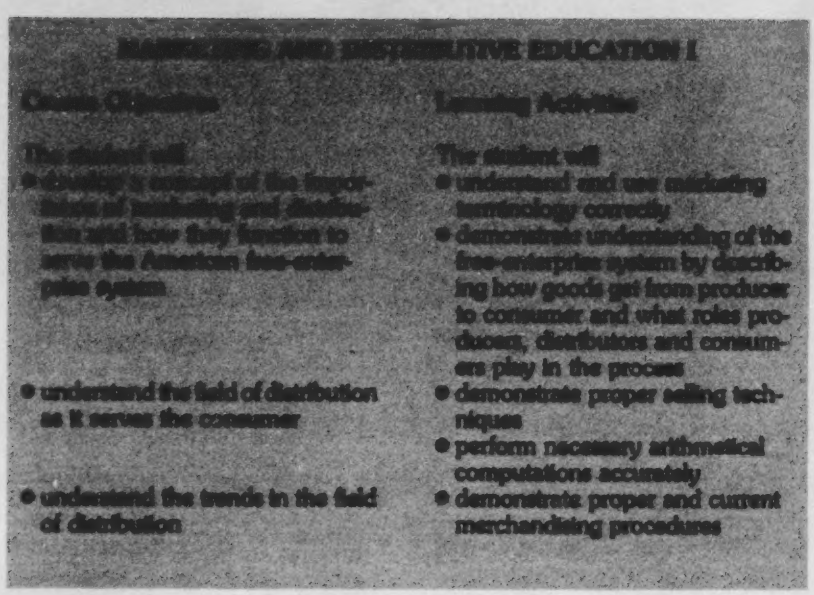
Distributive Education Clubs of America (DECA) is an integral part of the total marketing and distributive education/cooperative work education program.

11	12
MARKETING AND DISTRIBUTIVE EDUCATION I Work Education (OJT) Accounting II Information Processing II Business Machines Law/Economics	MARKETING AND DISTRIBUTIVE EDUCATION II WORK EDUCATION (OJT) Law/Economics Business Machines
MARKETING AND DISTRIBUTIVE EDUCATION I Work Education (OJT) Accounting II Information Processing II Business Machines Law/Economics	HOTEL AND MOTEL I WORK EDUCATION (OJT)/HOTEL AND MOTEL Law/Economics Business Machines
MARKETING AND DISTRIBUTIVE EDUCATION I Work Education (OJT) Accounting II Information Processing II Business Machines Law/Economics	VISUAL MERCHANDISING I WORK EDUCATION (OJT)/VISUAL MERCHANDISING Law/Economics Business Machines

OJT = On-the-Job Training

Courses in CAPS are REQUIRED; others are suggested electives.

Continued on page 56.



MARKETING AND DISTRIBUTIVE EDUCATION I

Course Objectives	Learning Activities
The student will	The student will
• develop a concept of the importance of marketing and distribution and how they function to serve the American free-enterprise system	• understand and use marketing terminology correctly • demonstrate understanding of the free-enterprise system by describing how goods get from producer to consumer and what roles producers, distributors and consumers play in the process
• understand the field of distribution as it serves the consumer	• demonstrate proper selling techniques • perform necessary arithmetical computations accurately
• understand the trends in the field of distribution	• demonstrate proper and current merchandising procedures

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Table 4, continued
Sequence of Courses
Marketing and Distributive Education (CWE)

Career Objective/ Field	Grade 9	10
Fashion Merchandising	Business Dynamics Business Communications	Accounting I Business Mathematics Information Processing I
Salesmanship	Business Dynamics Business Communications	Accounting I Business Mathematics Information Processing I

Course Objectives (cont.)	Learning Activities (cont.)
• explore careers in areas of marketing and merchandising of goods and services	• identify and describe jobs in both retail and wholesale distribution of products and services
• understand the educational needs and the personal traits that make for success in the marketing field	• study the biographies and analyze the behavior of successful salespersons and marketers
	• role play a salesperson, a telephone sales clerk, a clerk in a distribution center, etc.
• develop the skills necessary for securing an entry-level job, including those attitudinal and judgmental factors important to employability	• demonstrate the ability to fill out application forms, interview, and work under supervision
• develop and maintain good relationships in the school and business communities	• become an active member of the vocational student organization DECA (Distributive Education Clubs of America)

11

MARKETING AND DISTRIBUTIVE EDUCATION I
Work Education (OJT)
Accounting II
Information Processing II
Business Machines
Law/Economics

MARKETING AND DISTRIBUTIVE EDUCATION I
Work Education (OJT)
Accounting II
Information Processing II
Business Machines
Law/Economics

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FASHION MERCHANDISING I
WORK EDUCATION (OJT)/ FASHION MERCHANDISING
Law/Economics
Business Machines

SALESMANSHIP I
WORK EDUCATION (OJT)/ SALESMANSHIP
Law/Economics
Business Machines

Trade and Industrial Education

The trade and industrial education segment of vocational education educates and trains students for various entry-level occupations in the skilled trade areas. These include manufacturing, construction, food and service occupations which relate to the trade and industrial community. There are many different options which are available to local districts. The ones which they select should be those which most nearly meet the occupational needs of the labor market area for that district and surrounding regions. It is recommended that students who are planning to enter the trade and industrial education programs should complete the prevocational and introductory skill development phase of the program they wish to pursue. Students who participate decide on a specific occupation or occupational cluster, and learn advanced specialized skills during their trade and industrial education training.

Vocational Industrial Clubs of America (VICA) activities are considered an integral part of the total trade and industrial program.

Table 4, continued
Sequence of Courses
Trade and Industrial Education

Career Objective/ Field	Grade 9	10
Machine	IA Metalworking I	IA Metalworking II
Auto Body Repair	IA Power Mechanics I	IA Power Mechanics II
Auto Mechanic	IA Power Mechanics I	IA Power Mechanics II
Building Maintenance and Repairs	IA Woodworking I IA Electricity I IA Metalworking I	IA Woodworking II IA Electricity II IA Metalworking II
Carpentry	IA Woodworking I	IA Woodworking II
Drafting-Architecture	IA Drafting I	IA Drafting II
Drafting-Machine	IA Drafting I	IA Drafting II
Electrician	IA Electricity I	IA Electronics I

11-12	12
[redacted]	
RELATED BLUEPRINT READING I RELATED MATH I	MACHINE LAB II RELATED BLUEPRINT READING II RELATED MATH II
AUTO BODY REPAIR LAB I RELATED BLUEPRINT READING I RELATED MATH I	AUTO BODY REPAIR LAB II RELATED BLUEPRINT READING II RELATED MATH II
AUTO MECHANIC LAB I RELATED BLUEPRINT READING I RELATED MATH I	AUTO MECHANIC LAB II RELATED BLUEPRINT READING II RELATED MATH II
BLDG. MAINTENANCE AND REPAIRS LAB I RELATED BLUEPRINT READING I RELATED MATH I	BLDG. MAINTENANCE AND REPAIRS LAB II RELATED BLUEPRINT READING II RELATED MATH II
CARPENTRY LAB I RELATED BLUEPRINT READING I RELATED MATH I	CARPENTRY LAB II RELATED BLUEPRINT READING II RELATED MATH II
DRAFTING ARCH. LAB I RELATED MATH I	DRAFTING ARCH. LAB II RELATED MATH II
DRAFTING MACHINE LAB I RELATED MATH I	DRAFTING MACHINE LAB II RELATED MATH II
ELECTRICIAN LAB I RELATED BLUEPRINT READING I RELATED MATH I	ELECTRICIAN LAB II RELATED BLUEPRINT READING II RELATED MATH II

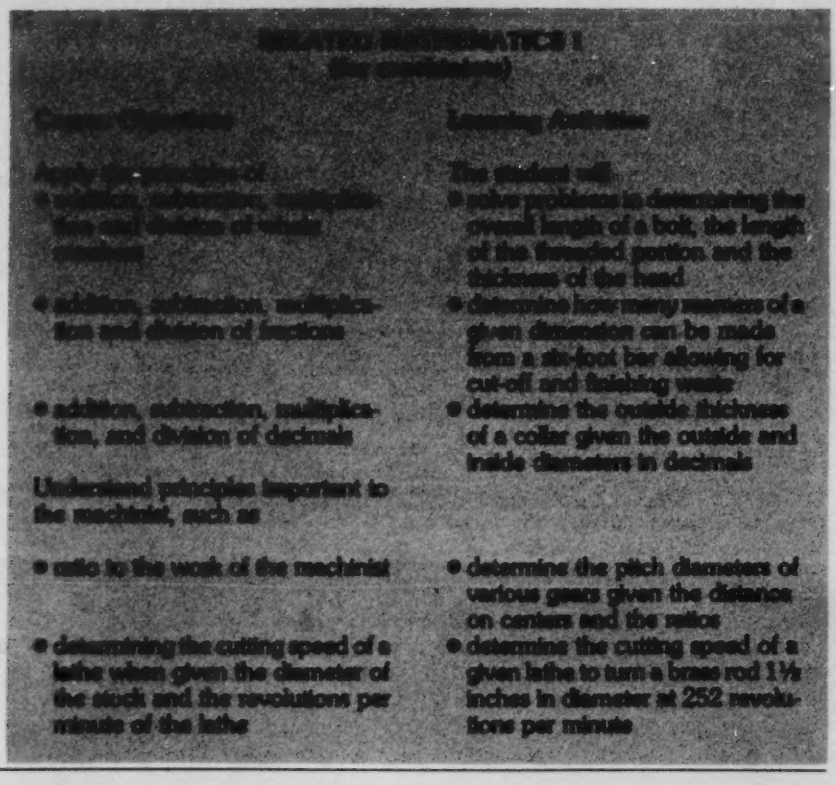

Table 4, continued
Trade and Industrial Education

Career Objective/ Field	Grade 9	10
Energy and Environment Control	General IA Shop	IA Electronics I
Graphic Communication	IA Graphic Arts I	IA Graphic Arts II
Industrial Electronics	IA Electricity I	IA Electronics I
Major Appliance Repairs	IA Electricity I	IA Electronics I
Plumbing	General IA Shop	IA Electricity II IA Electronics II
Sheet Metal	IA Metalworking I	IA Metalworking II
Welding	General IA Shop	IA Metalworking II

Courses in CAPS are REQUIRED. Others are suggested electives.

RELATED BLUEPRINT READING I
(for the machine trades)

Course Objectives	Learning Activities
The student will	The student will
• understand lines, sections and symbols used in the machine trade	• demonstrate the ability to use lines, sections and symbols used in machine blueprint reading as follows: outline lines — cutaways hidden " — inches leader " — feet center " — degrees dimension " — finish half section — grind
• recognize the different planes and lines used in orthographic projection	• demonstrate layout dimensions, line representations, surfaces, and dimensioning practices in constructing an orthographic projection
• identify construction of orthographic projection	• develop top, front, and side view and show planes and angles in orthographic projection of a machine part
• develop skills in the construction of orthographic projection	
• develop skills in making freehand sketches of working drawings	• produce assembly, detail and a simple object sketch in freehand, made from working drawings

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11–12

ENERGY AND ENVIRONMENT CONTROL LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

GRAPHIC COMMUNICATION LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

INDUS. ELECTRONICS LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

MAJ. APPLIANCE REPAIRS LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

PLUMBING LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

SHEET-METAL FABRICATING LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

WELDING LAB I
RELATED BLUEPRINT READING I
RELATED MATH I

12

ENERGY AND ENVIRONMENT CONTROL LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

GRAPHIC COMMUNICATION LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

INDUS. ELECTRONICS LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

MAJ. APPLIANCE REPAIRS LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

PLUMBING LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

SHEET-METAL FABRICATING LAB II
RELATED BLUEPRINT READING II
RELATED MATH LAB II

WELDING LAB II
RELATED BLUEPRINT READING II
RELATED MATH II

Appendix A
Statewide Goals for Education

From Connecticut's *Comprehensive Plan for Elementary and Secondary Education, 1980–1985*

GOAL ONE

Motivation to Learn

To realize their potential to learn, students must be highly motivated.

Therefore:

Connecticut public school students will develop strong motivation by responding to the high expectations of their parents, teachers and school administrators; by understanding and striving to fulfill personal aspirations, and by developing the positive feelings of self worth which contribute to responsible behavior and personal growth, health and safety.

GOAL TWO

Mastery of the Basic Skills

Proficiency in the basic skills is essential for acquiring knowledge and for success in our society.

Therefore:

Connecticut public school students will, to their full potential, learn to communicate effectively in speech and writing; read with understanding; acquire knowledge of and ability in mathematics, and strengthen decision-making skills.

Appendix A (continued)

GOAL THREE

Acquisition of Knowledge

Acquiring knowledge leads to fuller realization of individual potential and contributes to responsible citizenship.

Therefore:

Connecticut public school students will acquire the knowledge of science, mathematics, social studies, the arts, literature and languages which leads to an understanding and appreciation of the values and the intellectual and artistic achievements of their culture and other cultures, and will take full advantage of opportunities to explore, develop and express their own uniqueness and creativity.

GOAL FOUR

Competence in Life Skills

Students are challenged to function successfully in multiple roles as citizens, family members, parents, producers and consumers.

Therefore:

Connecticut public school students who complete secondary level studies will have the ability to make informed career choices; understand the responsibilities of family membership and parenthood; be prepared to undertake the responsibilities of citizenship in their communities, in the state, in the nation and in the world; and have the skills, knowledge and competence required for success in meaningful employment, or be qualified to enter postsecondary education.

GOAL FIVE

Understanding Society's Values

To be responsible citizens and contribute to positive change, students must understand and respect the underlying values of this society.

Therefore:

Connecticut public school students will appreciate diversity and understand the inherent strengths in a pluralistic society; they will understand and respond to the vital need for order under law; they will acquire the knowledge necessary to live in harmony with the environment, and actively practice conservation of natural resources, and they will respect the humanity they share with other people.

Appendix B
Legislation

The series of guides to curriculum development published in 1981 by the State of Connecticut Board of Education is consistent with the provisions of Sections 10-4 and 10-16b (or P.A. 79-128) of the Connecticut General Statutes.

Section 10-4. Duties of Board. (a) . . . shall prepare such courses of study and publish such curriculum guides . . . as it determines are necessary to assist school districts to carry out the duties prescribed by law . . . .

Section 10-16b. Prescribed courses of study. (a) In the public schools the program of instruction offered shall include at least the following subject matter, as taught by legally qualified teachers: the arts; career education; consumer education; health and safety; language arts, including reading, writing, grammar, speaking and spelling; mathematics; physical education; science; social studies, including, but not limited to, citizenship, economics, geography, government and history; and in addition, on at least the secondary level, one or more foreign languages and vocational education.

(b) Each local and regional board of education shall on September 1, 1982, and annually thereafter at such time and in such manner as the commissioner of education shall request, attest to the state board of education that such local or regional board of education offers at least the program of instruction required pursuant to this section, and that such program of instruction is planned, ongoing and systematic.

(c) The state board of education shall make available curriculum materials and such other materials as may assist local and regional boards of education in developing instructional programs pursuant to this section.

Section 10-96a. Master plan for vocational and career education. (a) The state board of education shall prepare with the advice of the advisory council on vocational and career education, representatives of local and regional boards of education, state technical schools, regional community and technical colleges, labor, business and industry and any other individuals or groups said board shall deem appropriate, a five-year master

Appendix B (continued)

plan for career and vocational education and shall submit said plan to the governor and the general assembly on or before February 15, 1976. The state board of education shall revise said master plan on or before January 1, 1979, and biennially thereafter.

(b) The master plan shall include, but not be limited to, the following elements: (1) goals for vocational and career education; (2) jurisdiction over vocational technical schools; (3) current financing practices and alternative methods of financing vocational and career education; (4) the number and location of schools and institutions providing vocational education; (5) the role and scope of each such school or institution; (6) distribution of enrollment; (7) utilization of existing facilities and the need for new facilities; (8) program distribution and the need for program revision, including termination of unproductive, obsolete or unnecessarily duplicative programs; (9) measures designed to improve opportunity in vocational and career education and measures designed to improve institutional responsiveness to projected work force needs to meet technological changes; and (10) transfer of students between schools or institutions providing vocational education and between programs within such schools or institutions.

(c) In implementing this section, the state board of education may request, and the state department of labor, the state department of commerce and the board of higher education shall provide, such assistance as may be required by the state board and agreed upon by the board, the departments and the commission.

Appendix C
Regional Educational Service Centers

Area Cooperative Education Services
(ACES)
800 Dixwell Avenue
New Haven, CT 06511

Capitol Region Education Council
(CREC)
212 King Philip Drive
West Hartford, CT 06117

Cooperative Educational Services
(CES)
11 Allen Road
Norwalk, CT 06852

Eastern Connecticut Regional Educational
Service Center (EASTCONN)
R.R. 2
Willimantic, CT 06226

Long-Range Educational Assistance for
Regional Needs (LEARN)
P.O. Box 220
East Lyme, CT 06333

Regional Educational Services Concept
through United Effort (RESCUE)
R.R. 2, Goshen Road
Litchfield, CT 06759

Appendix D
Regional Vocational Technical Schools

Connecticut's 17 regional vocational technical schools and four satellite schools offer intensive training for specific occupations at the secondary, postgraduate and adult education levels. Programs are primarily in the licensed and apprenticeship trades. The schools provide a significant amount of apprentice training in cooperation with the State Department of Labor. Shared-time programs from 3 p.m. to 5 p.m. provide opportunities for students who are not able to enroll in the regular day programs. Numerous programs exist to meet the needs of special populations both during the day and evening.

Ansonia	Emmett O'Brien, 141 Prindle Avenue, Ansonia, 06401 Telephone: 735-9361
Bridgeport	Bullard-Havens, 500 Palisade Avenue, Bridgeport, 06610 Telephone: 579-6333
Bristol	E.C. Goodwin Satellite, 632 King Street, Bristol, 06010 Telephone: 583-0415
Danbury	Henry Abbott, Hayestown Avenue, Danbury, 06810 Telephone: 797-4460
Danielson	H.H. Ellis, Maple Street, Danielson, 06239 Telephone: 774-8511
Enfield	Howell Cheney Satellite, 111 Phoenix Avenue, Enfield, 06082 Telephone: 745-1603
Essex	Vinal Satellite, Middlesex Turnpike, Essex, 06426 Telephone: 767-0181
Groton	Ella T. Grasso—Southeastern, 189 Fort Hill Road, Groton, 06340 Telephone: 448-0220
Hamden	Eli Whitney, 71 Jones Road, Hamden, 06514 Telephone: 397-4031
Hartford	A.I. Prince, 500 Brookfield Street, Hartford, 06106 Telephone: 246-8594
Manchester	Howell Cheney, 791 West Middle Turnpike, Manchester, 06040 Telephone: 649-5396
Meriden	H.C. Wilcox, Oregon Road, Meriden, 06450 Telephone: 238-6260
Middletown	Vinal, 60 Daniels Street, Middletown, 06457 Telephone: 344-2930

Milford	Platt, 600 Orange Avenue, Milford, 06460 Telephone: 877-2771
New Britain	E.C. Goodwin, 735 Slater Road, New Britain, 06053 Telephone: 827-7736
Norwich	Norwich, 590 New London Turnpike, Norwich, 06360 Telephone: 889-8453
Simsbury	A.I. Prince Satellite, 507 Hopmeadow Street, Simsbury, 06070 Telephone: 651-3409
Stamford	J.M. Wright, Scalzi Park, Stamford, 06904 Telephone: 324-7363
Torrington	Oliver Wolcott, 75 Oliver Street, Torrington, 06790 Telephone: 489-0261
Wallingford	H.C. Wilcox Satellite, Pond Hill Road, Wallingford, 06402 Telephone: 265-2014
Waterbury	W.F. Kaynor, 43 Tompkins Street, Waterbury, 06708 Telephone: 754-4188
Willimantic	Windham, 210 Birch Street, Willimantic, 06226 Telephone: 423-4544

Course Offerings

Air Conditioning and Refrigeration
Auto Body Repair
Automatic Screw Machine
Automotive Mechanics
*Aviation Mechanics
Avionics
Baking
*Barbering
Building Maintenance
Carpentry
Chemistry, Industrial
Data Processing
*Dental Assistant
*Dental Lab Technician
Digital Electronics
Drafting
  Architectural
  Construction Design
  Machine
  Marine
Electrical
Electromechanical
Electronics
Engine Repair
  Diesel
  Small Marine
Environmental Systems
Fashion Design
Food Trades
Gas and Oil Fired Burners
Graphic Communications
Hairdressing and Cosmetology
Health Services Occupations
Heating and Piping Process
**Homemaker—Health Aide
Machine—Tool
Major Appliance Repair
Masonry
Painting and Decorating
Plumbing and Fitting
*Practical Nurse Education
Sheet Metal
Shipbuilding
Small Business Machine Repair
Spring Making
Surgical Technician
*Welding

*Postsecondary
**Adult

Appendix E
Regional Vocational Agriculture Centers

There are 17 regional vocational agricultural centers and two local vocational agriculture programs located throughout the State of Connecticut. The regional centers operate within a comprehensive high school in the community in which they are located. The high school student is enrolled for his/her total secondary school program in that high school while studying vocational agriculture as a type of elective program for one-third of the student's in-school time.

Cost of tuition and travel for students from outside the community where vocational agriculture centers are located is paid by the district where students reside, in accordance with Connecticut statute.

The vocational agriculture high school student explores all phases of agriculture in the first two years and is able to major in more specialized studies of agricultural mechanics, animal science, plant science or natural resources in the third and fourth years.

High school vocational agriculture has a supervised occupational experience program requirement. The student must, in addition to the in-school instructional program, have a work program carried on beyond the school day and/or the usual school year to gain actual experience in agriculture or in an agriculturally related occupation. Instructors are employed for a 12-month year to supervise the experience programs.

The Future Farmers of America (FFA) is an organization in which students of vocational agriculture have membership. The FFA is an integral part of the total program of vocational agriculture and as such supplements the total learning process of the student.

Regional vocational agriculture centers provide for the upgrading and retraining of out-of-school youth and adults who are established in or about to enter agriculture or related occupations.

Danielson Killingly High School, Westfield Avenue, Danielson, 06249
Telephone: 774-4081

Falls Village Housatonic Valley Regional High School, Falls Village, 06031
Telephone: 824-5123, ext. 23

Glastonbury	Glastonbury High School, 330 Hubbard Street, Glastonbury, 06033 Telephone: 633-5231, ext. 478
Hartford	Bulkeley High School, 300 Wethersfield Avenue, Hartford, 06114 Telephone: 722-6308
Lebanon	Lyman Memorial High School, Route 207, Lebanon, 06249 Telephone: 642-7759
Ledyard	Ledyard High School, 24 Gallup Hill Road, Ledyard, 06339 Telephone: 464-9600
Litchfield	Wamogo Regional High School, Litchfield, 06759 Telephone: 567-8548
Middletown	Woodrow Wilson High School, Hunting Hill Avenue, Middletown, 06457 Telephone: 346-3564
Rockville	Rockville High School, Loveland Hill M.R., Rockville, 06066 Telephone: 872-7391, ext. 34
Southington	Southington High School, 720 Pleasant Street, Southington, 06489 Telephone: 628-0331, ext. 314
Stamford	West Hill High School, 125 Roxbury Road, Stamford, 06902 Telephone: 358-4974
Storrs	E.O. Smith High School, Storrs, 06268 Telephone: 486-2737
Suffield	Suffield High School, 350 Mountain Road, Suffield, 06078 Telephone: 668-5355
Trumbull	Trumbull High School, 72 Strobel Road, Trumbull, 06611 Telephone: 261-6411, ext. 265
Wallingford	Lyman Hall High School, Wallingford Regional Vocational Agriculture Center, Pond Hill Road, Wallingford, 06492 Telephone: 265-2831, ext. 221
Waterbury	Wilby High School, Waterbury Regional Vocational Educational Agriculture Center, Bucks Hill Road, Waterbury, 06710 Telephone: 574-8100
Woodbury	Nonnewaug Regional High School, Ellis Clark Regional Vocational Agriculture Center, Woodbury, 06798 Telephone: 263-4339

Sequences Recommended for Vocational Agriculture Education

Grades 9, 10

Career Objective/Field	Required Units	Weeks
Core Areas of Study	Agricultural Mechanics (Basic)	18
	Animal Science (Animal Care, including poultry)	15
	Career Awareness and Orientation	3
	Future Farmers of America	6
	Natural Resources (Appreciation of Managing)	9
	Plant Science	15

Appendix E (continued)

Sequences for Vocational Agriculture (continued)

		Weeks
	Supervised Occupational Experience Programs	6
	Supervised Occupational Experience—Out of School, over 9 months for grade 9, and over 12-month period—grades 10, 11, 12	

Grades 11, 12

Required Units

Core Areas of Study	Agriculture Business Management	12
	Career Preparation and Decisions Making	3
	Future Farmers of America	6
	Supervised Occupational Experience Program	3
	Supervised Occupational Experience (Required each student, each grade)	12

Grades 11, 12

Career Objective/Field	Elective Units
Agriculture Mechanics	Agricultural Mechanics Shop Planning
	Concrete
	Developing Skills in Welding
	Diesel and Gasoline Fuel Systems
	Electrical Motors and Controls
	Energy Sources for Agriculture
	Equipment Assembly
	Fencing
	Gas Engines, Repair and Overhaul
	Hydraulics
	Independent Shop Projects
	Internal Combustion Engine Overhaul
	Machinery Repair
	Operation and Adjustment of Field Machines
	Power Transmissions
	Structures
	Surveying (Conservation)
	Tractor Maintenance
	Tractor Tune-up
	Utilities—Water Supply and Septic Systems
	Waste Disposal
Animal Science	Animal Selection
	Beef
	Breeding and Genetics
	Dairy
	Dairy Processing
	Goats
	Horses
	Meats
	Poultry

Elective Units, continued

	Sheep
	Small Animals
	Swine
	Veterinary Science
Natural Resources	Chain Saw Care and Operation
	Christmas Tree Production
	Determining Water Quality
	Forest Harvesting Practices
	Fish Culture
	Forest Management
	Forest Measurements
	Forest Products
	Forest Protection
	Forest Soils
	Game Bird Propagation
	Outdoor First Aid
	Prevention and Control of Forest Fires
	Recreation
	Surveying
	Taxidermy, Basic
	Tree Identification
	Wildlife Management
Plant Science	*Aquaculture
	Bedding Plant Production and Management
	Bee Keeping
	Cut Flower Production and Marketing
	Floral Design
	Fruit Production and Marketing
	Greenhouse Specialty Crops
	Greenhouse Structures
	Holiday Production and Marketing
	Interior Landscape Design
	Landscape Construction
	Landscape Design
	Landscape Maintenance
	Nursery Management
	Operation and Care of Equipment
	Perennial Plant Production and Marketing
	Plant Anatomy and Function
	Potted Plant Production and Marketing
	Propagation
	Retail Flower Shop Management
	Turf Management
	Vegetable Production and Marketing

*A pilot program, offered in Stamford in 1981, is expected to be a model for similar programs in other locations.

Appendix F
Resources

Associations and publications available as resources to vocational educational curriculum planners are listed in the following categories: general, including needs assessment; business office education; cooperative work education/diversified occupations; health occupations; home economics, including consumer and occupational home economics; industrial arts; marketing and distributive education; trade and industry, and vocational agriculture.

Vocational Education, General

Associations

American Vocational Association (AVA)
2020 N. 14th Street
Arlington, VA 22201

Council of Economic Advisors
60 Washington Street
Hartford, CT 06106

Publications

Busnell, David S. *Articulation With Industry: The Role of Vocational Education in Economic Development.* Arlington, VA: American Vocational Association, 1980.

Connecticut Business and Industry Association. *Unfilled Jobs in the Midst of High Unemployment.* Hartford: 1980.

Connecticut State Board of Education. *Education and Work: An Agenda for Action,* Connecticut's Plan for Vocational, Career and Adult Education. Hartford: 1981.

Connecticut State Department of Education, Division of Vocational and Adult Education. *Vocational Career Guide for Connecticut.* Hartford: 1980.

Feldman, Marvin. *Work Employment and New Economics.* Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Kaplan, Carol B. and Jack Hamilton, Ph.D. *Vocational Education Curriculum Specialist Modules.* Palo Alto, CA: American Institutes for Research in Behavioral Sciences, 1981.

Lecht, Leonard A. *Vocational Education As a Participant in the Economic Development Enterprise: Policy Options for the Decade Ahead.* Columbus, OH: The National Center for Research in Vocational Education, The Ohio State University, 1981.

Lincoln, Carnie Ives. *Testimony of Carnie Ives Lincoln*, assistant secretary, Connecticut General Life Insurance Company and president, The American Society for Training and Development.

National Center for Research in Vocational Education. *Curriculum Resources*, vol. 14, no. 6. Columbus, OH: The Ohio State University, 1981.

U.S. Department of Labor. *Occupational Outlook*. Washington, DC: Bureau of Labor Statistics, 1981.

Vocational Studies Center, University of Wisconsin. *A Handbook on Utilization of Entrepreneurship Material for Vocational Education*. Madison, WI: 1971.

Needs Assessment

Publications

Connecticut State Department of Economic Development. *Connecticut Economy 1950–1975*.

Connecticut State Department of Economic Development. *Market Data*. (annual publication of economic data)

Connecticut Office of Policy and Management. "State of Connecticut Population Projections."

Education and Employment Information Center. *Guidance and Counseling Services in Connecticut*.

Education and Employment Information Center. *Skill Development Courses and Services in Connecticut*.

U.S. Department of Labor. *Projections of Occupational Employment in New England to 1985*. Bureau of Labor Statistics, New England Regional Office, 1978.

Available from
Connecticut State Department of Education
P.O. Box 2219, Hartford, Connecticut 06145

Connecticut Education Directory

Critical Issues in Education and Employment Training

Inventory—Vocational-Technical-Career Program Offerings in Connecticut

Non-Traditional Jobs for Women, A Resource Guide for Connecticut Women and Career Counselors

Vocational Career Guide for Connecticut

Available from
Connecticut State Department of Labor
200 Folly Brook Boulevard, Wethersfield, Connecticut 06109

Annual Planning Information FY 1982.

Employment Resources: A Guide for Women in Connecticut. Office of Research and Information: March 1979.

Labor Situation, and Occupations in Demand. Monthly publications.

Appendix F (continued)

Business Office Education (BOE)

Associations

National Business Education Association
1914 Association Drive
Reston, VA 22091

Business and Marketing Resource Center
Center School
55 Sutton Avenue
Stratford, CT 06497

Curricula

Available from
National Business Education Association
Reston, VA 22091

"Alternative Learning Styles in Business Education." NBEA Yearbook: 1979.
"The Changing Office Environment." NBEA Yearbook: 1980.
"Curriculum Development in Education for Business." NBEA Yearbook: 1977.
"Evaluation and Accountability in Business Education." NBEA Yearbook: 1978.
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Available from
Connecticut State Department of Education
P.O. Box 2219, Hartford, Connecticut 06145

Boulden, Alfred. *Curriculum Materials for Small Business Ownership and Management.* 1979.
Cameron, Harrison and Dean Malsbary. *Education for Business: Curriculum Handbook.* 1976.
Lerman, Roslyn. *Considerations for the Development of a Broad-Based, High School Business Curriculum for the College-Bound.* 1980.
Malsbary, Dean. *Suggested Minimal Standards and Student Competencies for Connecticut Secondary Schools.* 1978.
Swartz, Carl. *Education for Business Guidance Materials.* 1978.
Tatangelo, George. *Education for Business Data Processing Curriculum.* 1979.

Publications

Available from
Connecticut State Department of Education
P.O. Box 2219, Hartford, Connecticut 06145

Dyer, Richard. *Integrating FBLA Materials into the BOE Classroom.* 1978.
Garman, Clair. *A Report on an Introductory Study Dealing With Opinions on and Use of Business Standards and Student Competencies in Connecticut Public Secondary Schools.* 1978.
Guiffrida, Mary Ann. *School-Based Job Placement Program for Business and Office Education Students.* 1981.

Holop, Rhoda. *Suggestions and Techniques for Developing Sex Fairness in Business and Office Education.* 1980.

Swartz, Carl. *BOE Career Education Materials and Media for Students in Grades 7–12.* 1980.

Trudell, Elizabeth. *Metrics for BOE Students.* 1980.

Cooperative Work Education/Diversified Occupations

Associations

American Vocational Association
2020 H. 14th Street
Arlington, VA 22201

Connecticut Association of Cooperative Work Education/Diversified Occupations
John DeCesare, President
Wolcott High School
457 Bound Line Road
Wolcott, CT 06716

Cooperative Work Education Experience Association
E. Weston Pfeiffer, President
Department of Education
225 West State Street
Trenton, NJ 08625

Curricula

Connecticut Cooperative Work Education/Diversified Occupations General Related Curriculum. Boston, MA: Northeastern University, Center for Secondary School Work Experience Education, 1980.

On the Track. Film/Filmstrip (Recruiting—public relations). CWE Resource Center, Norwalk Board of Education, 105 Main Street, Norwalk, CT 06851.

Connecticut State Department of Education. *Specific Related Instruction Reference Guide, Cooperative Work Education/Diversified Occupations.* Hartford: 1977 supplement.

Training Plans—Cooperative Work Experience/Diversified Occupations—Vol. I–II, 1972/1973. CWE Resource Center, Norwalk Board of Education, 105 Main Street, Norwalk, CT 06851.

Publications

Connecticut State Department of Education. *Assessment Guidelines for State-Approved Cooperative Work Education/Diversified Occupations Programs.* Hartford: 1978.

Herr, Edwin L. *Your Working Life—A Guide to Getting and Holding a Job.* New York: McGraw-Hill Book Co., Gregg Division, 1980.

Kimbrell, Grady. *Succeeding in the World of Work,* 3rd edition. Bloomington, IL: McKnight Publishing Co., 1981.

Olson, Ron. *My Vocational Internship Guidebook.* Minneapolis, MN: Conrad Publishing Co., 1979.

U.S. Bureau of Labor Statistics. *Occupational Outlook Handbook.* Annual publication.

U.S. Department of Labor. *Child Labor Requirement in Non-Agricultural Occupations.* WH publication number 1330.

Available from
Connecticut State Department of Labor
200 Folly Brook Boulevard, Wethersfield, CT 06109

Apprenticeship—Information Center (AIC). Approval of apprentice training programs—statistical reports. Monthly report.
Connecticut OSHA—Safety and Health Standards Digest. 1973.
Jobs for Minors. A broad range of jobs are permitted for young people in Connecticut, from employment in agriculture, banks, camps and government to particular work in industry.
Occupations in Demand. Monthly publication showing specific occupations for which there are greater than ten openings in the state registered with the Job Service. Indication of number of openings by Labor Market Area and average wages.
Workmen's Compensation. Bulletin No. 33.

Health—Occupations Education

Associations

Connecticut Health Association
428 Columbus Avenue
New Haven, CT 06519

Health Occupations
United States Office of Education
Dr. Thaine McCormick
7th Avenue and D Street, SW
Washington, DC 20202

Connecticut Association of Health Occupational Education (CAHOE)
For current address call
Health Occupations Consultant
State Department of Education
Division of Vocational Services

National Association for Health Occupations Education
Mrs. Nancy Teague
Orange County Schools
Box 271, North Tampa Avenue
Orlando, FL 32802

National Association State Administrators Health Occupations Education
A.V.A. Region I
Judith D. Fillion, Consultant
New Hampshire State Department of Education
105 Loudon Road
Concord, NH 03301

Curricula

Alabama State Department of Education. *Health Occupations Education Curriculum Guide—Health Occupations Education.* Montgomery, AL.
California State Department of Education. *A Competency-Based Health Occupations Curriculum Guide.* Sacramento, CA: 1980.
Connecticut State Department of Education, Bureau of Vocational Services. *Guidelines for Health Occupations Education.* Hartford: 1976.
Minnesota State Department of Education. *Curriculum for Secondary Health Careers, Teachers Guide.* Wells, MN: Southern Minnesota Cooperative Center, 1974.
Oklahoma State Department of Vocational Technical Education. *Health Service Careers.* Stillwater, OK: Curriculum and Instructional Materials Center, 1979.

Publications

American Hospital Association. *Educational Programs in the Health Field.* Chicago, IL.
Connecticut State Department of Education, Division of Vocational Education. *Health Related Careers in Connecticut, Education and Training Programs.* Hartford: 1980.

Hospital Research and Educational Trust. *Being a Nursing Aide*, 3rd edition. Bowie, MD: Robert J. Brady Co., 1982.

Illinois State Department of Education, Division of Vocational Technical Education. *Health Occupations at the Secondary Level—A Guide for Teachers and Administrators*. Springfield, IL: 1977.

National Health Council, Inc. *200 Ways to Put Your Talent to Work in the Health Field*. New York: 1977.

New Jersey State Department of Education, Division of Vocational Technical Education. *Guidelines for Conducting Health Occupations—Cooperative Education Programs*. New Brunswick, NJ: 1975.

United States Department of Health and Human Resources, Public Health Service. *Education for Allied Health Professions and Services*. Washington, DC: 1972.

University Research Institute of Connecticut, Inc. *Vocational Career Guide for Connecticut*. Wallingford, CT: 1976.

Wood, Loalle and Beverly Rambo, editor. *Nursing Skills for Allied Health Services*, 2nd edition. Philadelphia: W.B. Saunders Co.: 1977.

Available from
United States Department of Labor
Bureau of Labor Statistics
Washington, DC

Health Careers Guidebook.
Occupational Outlook (subscription).
Occupational Outlook Handbook.

Home Economics

Associations

American Home Economics Association
2010 Massachusetts Avenue, NW
Washington, DC 20036

American Vocational Association
2020 N. 14th Street
Arlington, VA 22201

Future Homemakers of America/Home Economics Related Occupations
2010 Massachusetts Avenue NW (fall 1982, Reston, VA)
Washington, DC 20036

Home Economics Education Association
1201 Sixteenth Street, NW
Washington, DC 20036

Curricula

Consumer Home Economics

Connecticut State Department of Education. *Consumer-Home Economics Curriculum/Senior High*. Hartford: Bureau of Vocational Services, 1975.

Connecticut State Department of Education. *FHA/HERO* Guidelines. Hartford: Bureau of Vocational Services, 1980.

Appendix F (continued)

Occupational Home Economics

Available from
Connecticut State Department of Education
Bureau of Vocational Services
P.O. Box 2219, Hartford, Connecticut 06145

The Missing Link: CWE/HE Handbook. 1979.
Occupational Child Care Services—Developmental Guidelines. 1981.
Occupational Clothing Services—Developmental Guidelines. 1981.
Occupational Food Service—Developmental Guidelines. 1980.

Publications

Available from
Connecticut State Department of Education
Bureau of Vocational Services
P.O. Box 2219, Hartford, Connecticut 06145

Bernadt, Ruth. *Teaching Units for Consumer Home Economics: Creative Needlework* (Bilingual—Spanish). 1981.
Bernadt, Ruth. *Teaching Units for Consumer Home Economics: Housing/Interior Decorating* (Bilingual—Spanish). 1981.
Boutilier, Laura. *Teaching Units for Consumer Home Economics: Legal Rights and Responsibilities of Teens.* 1981.
Boutilier, L. and D. Graves. *Teaching Units for Consumer Home Economics: Home Crafts.* 1981.
Consumer-Home Economics Middle School Modules:

Caring for Clothes
Customs and Cultures
Energy Conservation
Growing, Preparing and Tasting Plants
Looking Good
Moving into Adulthood
My Legal Rights and Responsibilities
My Living Environment
Preparing and Caring for Children
Safety in the Home
Self-Protection
Shoplifting—It's No Game

Graves, Dayl. *Teaching Units for Consumer Home Economics: Death, Dying and Loss.* 1981.
Maineri, Sandra. *Teaching Units for Consumer Home Economics: Mainstreaming Special Students.* 1981.
Riggs, Ruth. *Teaching Units for Consumer Home Economics: Gifted Students.* 1981.

Industrial Arts

Associations

American Council of Industrial Supervisors (ACIAS)
c/o Thomas Hughes
Virginia State Department of Education
P.O. Box 60
Richmond, VA 23216

American Industrial Arts Association (AIAA)
1914 Association Drive
Reston, VA 22091

American Industrial Arts Student Association (AIASA)
1908 Association Drive
Reston, VA 22091

Connecticut Industrial Arts Association (CIAA)
Dr. John Larkin, President
School of Technology
Central Connecticut State College
New Britain, CT 06050

Connecticut Industrial Arts Leadership Council
c/o David M. Mordavsky
State Department of Education
P.O. Box 2219
Hartford, CT 06145

Connecticut Association of American Industrial Arts Student Association
State Adviser, State Department of Education
P.O. Box 2219
Hartford, CT 06145

New England Council of Industrial Supervisors
Thomas F. Birmingham, Chairman
State Department of Education
Augusta, ME 04333

New England Industrial Arts Teachers Association
c/o Sanford E. Rich
Director of Professional Development
School of Technology
Central Connecticut State College
New Britain, CT 06050

Curricula

Available from
Industrial Arts Consultant
State Department of Education
P.O. Box 2219, Hartford, Connecticut 06145

AIASA Handbook
Alternative Energy
Connecticut Eye Safety Manual for Education (also available from Connecticut Society to Prevent Blindness, Box 20/20, Madison, CT 06443).
Drafting Curriculum
Electricity-Electronics Curriculum
General Lab Curriculum
Graphic Arts Curriculum
Industrial Arts Safety Curriculum
Industrial Ceramics Curriculum
Metal Technology Curriculum
Plastics Technology Curriculum
Power Technology Curriculum
Woodworking Technology Curriculum

Appendix F (continued)

Publications

Available from
American Industrial Arts Association
1914 Association Drive
Reston, VA 22091

Brown, Kenneth W. *Model of a Theoretical Base for Industrial Arts Education.* Monograph No. 1. 1977.
Michaels, William J. *Come Monday Morning.* Monograph No. 2. 1978.
Teacher Competencies for the Cybernated Age. Monograph No. 3. 1970.
Graduate Programs in Industrial Arts. Monograph No. 4. 1974.
The Future: A Challenge to Industrial Arts. Monograph No. 5. 1975.
Research in Industrial Education. Monograph No. 6. 1976.
Industrial Arts Builds Skills in People That America Needs. Monograph No. 7. 1979.
Benjamin, Harold. *New Pressures and Old.*
DeVore, Paul W. *Structure and Content Foundations for Curriculum Development.* 1973.
Industrial Arts in the Middle School. 1971.
Hunt, Elizabeth. *What About Industrial Arts in the Elementary Schools.*
Maley, Donald. *Contemporary Methods of Teaching Industrial Arts.* 1973.
Recommended Qualifications, Duties, and Responsibilities for State and Local Supervisors of Industrial Arts. 1974.
Stamm, Colleen P., editor
Articulation in Career Education. 1973.
Career Education: Definition and Evaluation. 1973.
Change in Teacher Education. 1973.
Curriculum Projects. 1973.
Elementary School Career Education. 1973.
Elementary School Industrial Arts. 1973.
Individualized Instruction. 1973.
Industrial Arts and the Environment. 1973.
Industry and Career Education. 1973.
Individualized Instruction. 1973.
Instructional Technology. 1973.
Middle School Industrial Arts. 1973.
Potential Dropouts. 1973.
Technology. 1973.
Technology in the Classroom. 1973.
What About Planning New Industrial Arts Facilities.
Wiles, Kimball. *Curriculum—Innovations and Issues.* 1965.

Additional curricula, pamphlets, slides, films, books, etc. can be obtained on a *free loan-basis* from:

Connecticut Industrial Arts Association
Media Library
c/o Craig Clark, Librarian
Weaver High School
Hartford, CT 06112

New England Industrial Arts Teachers Association
Media Library
c/o Carl Hubachek, Director of
Dissemination and Records
7 Meadow Road
North Branford, CT 06471

Marketing and Distributive Education

Associations

Council for Distributive
Teacher Education
1908 Association Drive
Reston, VA 22091

Distributive Education Clubs
of America (DECA)
Professional Division
1908 Association Drive
Reston, VA 22091

Interstate Distributive
Education Curriculum
Consortium
Ohio State University
1564 West First Avenue
Columbus, OH 43212

National Association of Distributive
Education Local Supervisors
1908 Association Drive
Reston, VA 22091

National Association of Distributive
Education Teachers
1908 Association Drive
Reston, VA 22091

National Association of State Super-
visors of Distributive Education
1908 Association Drive
Reston, VA 22091

Curriculum

Connecticut Marketing and Distributive Education Handbook. Stratford, CT: Resource Center, Center School, 1977.

Publications

Available from
Connecticut State Department of Education
P.O. Box 2219, Hartford, Connecticut 06115

Abbott, Edi. *Needs Assessment for Marketing and Distributive Education.* May 1980.
Bleck, Donna L. *Curriculum Guide—Fashion Merchandise-Marketing and Distributive Education.* 1980.
Cohen, Hyla A. *Curriculum Guide—Energy.* 1981.
Cohen, Hyla A. *Simulation Materials and Games for Potential Use in Marketing and Distributive Education Classes.* May 1980.

Appendix F (continued)

Connecticut (Junior Collegiate) Distributive Education Clubs of America. Annual publication.

Cunha, Harry J. *A Study of the Marketing Programs in the Public Postsecondary Two-Year Institutions in the State of Connecticut.* 1980.

Distributive Education Handbook. 1977.

Don't Sell Yourself Short—Get Ahead in Marketing and Distributive Education. Annual publication.

Grassilli, Nancy. *Program Guidelines for Postsecondary Cooperative Fashion Merchandising Programs for Use in Connecticut Postsecondary Institutions.* 1981.

Harvey, Richard, Joseph Minutillo and Daniel Viens. *Curriculum Guide on Finance and Credit for Teacher-Coordinators of Marketing and Distribution.* 1979.

Michaels, Bruce. *Standards for Inner City Marketing and Distributive Education Programs.* March 1981.

Mooney, Robert. *Distributive Education for Economically Disadvantaged Youth.* 1980.

Sparks, Gertrude, *IDECC: Methodology and Utilization for DECA Competitive Events.* May 1980.

Sulick, Robert. *Equipment Survey of the Marketing and Distributive Education Laboratories.* 1981.

Viens, Daniel. *Curriculum Guide on Food Marketing for Teacher-Coordinators of Marketing and Distribution.* 1980.

Trade and Industrial Education

Associations

Connecticut Association for Trade and Industrial Educators
State Department of Education
P.O. Box 2219
Hartford, CT 06145

National Association for Trade and Industrial Education
P.O. Box 1665
Leesburg, VA 22075

National Association of State Supervisor of Trade and Industrial Education
P.O. Box 1665
Leesburg, VA 22075

Curricula

Connecticut State Department of Education, Trade and Industrial Education Curriculum Guidelines. Programs include minimum listing of equipment necessary for initiating Trade and Industrial Education Training.

The following program guidelines are available from the Bureau of Vocational Services, State Department of Education, P.O. Box 2219, Hartford, CT 06145.

- Air Conditioning
- Automotive
  - Laboratory
  - Production
- Auto Body
- Baking
- Building Maintenance
- Carpentry
- Drafting
  - Architectural
  - Machine
- Electrical
- Electronics
- Electro-Mechanical
- Food Trades
- Graphic Communication
- Painting and Decorating
- Plumbing and Heating
- Sheet Metal
- Spring Making
- Welding

Related Education—Trades

Blue Print Reading
Basic to all trades
Blue Print Reading
Building Trades
Carpentry
Electrical
Plumbing

General Related Math
Basic to all trades

Publications

Bellis, Herbert F. and Walter A. Schmidt. *Blue Print Reading for the Construction Trades.* Hightstown, NJ: McGraw-Hill Book Co., Gregg Division, 1978.
Buban, Peter and Marshall Schmitt. *Technical Electricity and Electronics.* New York: Webster/McGraw-Hill Book Co., 1977.
Capotosto, John. *Basic Carpentry.* Tarrytown, NY: Prentice-Hall, 1980.
Connecticut State Department of Education, Bureau of Vocational Services. *Building Maintenance Man.* Hartford: 1975.
Connecticut State Department of Education, Bureau of Vocational Services. *Machine Operation.* Hartford: 1977.
Crouse, William H. *Automotive Mechanics.* Hightstown, NJ: McGraw-Hill Book Co., Gregg Division, 1979.
Duenk, Lester G., W. Randolph Williams and Clarence A. Brooks. *Auto Body Repairs.* Peoria, IL: C.A. Bennett Books Co., Inc., 1980.
Feirer, Dr. John L. *Carpentry and Building Construction.* Peoria, IL: C.A. Bennett Books Co., Inc., 1980.
Lescroart, Eugene E. *Machine Trade.* Hartford: Connecticut State Department of Education, 1970.
Miller, Dr. Rex. *Industrial Electricity.* Peoria, IL: C.A. Bennett Books Co., Inc., 1980.
Morrison, James W. *Energy Saving Handbook for Homeowners.* New York: Harper & Row Pubs., Inc., 1977.
Philbin, Tom. *Basic Plumbing.* Tarrytown, NY: Prentice-Hall, Inc., 1977.
Sacks, Raymond U. *Welding: Principles and Practices.* Peoria, IL: C.A. Bennett Books Co., Inc., 1980.
Smith, R.C., T.L. Honkala and C.K. Andres. *Masonry: Materials, Design, Construction.* Tarrytown, NY: Prentice-Hall, Inc., 1979.
Wyatt, William E. *General Architectural Drafting.* Peoria, IL: C.A. Bennett Books Co., Inc., 1980.

Vocational Agriculture/FFA

Associations

National Future Farmers of
America, Inc.
5632 Mount Vernon Memorial
Highway
P.O. Box 15160
Alexandria, VA 22309

National Vocational Agriculture
Teachers Association
5600 Mount Vernon Memorial
Highway
Alexandria, VA 22309

Curriculum

Connecticut State Department of Education, Bureau of Vocational Services. *Connecticut Vocational Agriculture Suggested Curriculum.* Hartford: 1981.

Publications

National Future Farmers of America. *Your Career in Agriculture/Agribusiness.* 1981.

Appendix G
Occupational Clusters

The following listing of occupations was prepared by the U.S. Office of Education (USOE). Occupations are grouped into 15 broad areas of work identified by the USOE, and subfields within each cluster are listed. This information may be helpful in assessing local needs, and in planning and evaluating vocational education programs.

AGRIBUSINESS AND NATURAL RESOURCES

Research
Forestry
Land and Water Management
Fisheries and Wildlife
Mining and Quarrying
Petroleum and Related Products
Productive Agriculture

BUSINESS AND OFFICE

Accounting
Computers
Secretarial Science
Management
Personnel
Finance, Insurance, Real Estate
Office (Clerical)

COMMUNICATIONS AND MEDIA

Journalism
Motion Pictures
Telephone and Telegraph
Recording Industry
Radio and Television Broadcasting
Satellite and Laser Transmission

CONSTRUCTION

Structural Work Occupations
Equipment Operators
Engineering and Support Occupations

CONSUMER AND HOMEMAKING EDUCATION

Food Specialists
Housing and Household Equipment Specialists
Textiles and Clothing Specialists
Family Economics and Home Management
Family Relations and Child Development
Extension Services

ENVIRONMENT

Pollution Prevention and Control
Disease Prevention
Environmental Planning
Resource Control

FINE ARTS AND HUMANITIES

Visual Arts
Writing
The Performing Arts
Architecture
Religion and Theology
Language and Linguistics
History and Museums

HEALTH

Mental Health and Mental Health Services
Medical and Biological Science Services and Professions
Dentistry and Related Services
General Hospital and Medical Office Related Occupations
Medical Emergency Services
Administration of Health Services
Personal and Community Health Services
Pharmaceutical Science

HOSPITALITY AND RECREATION

Commercial and Noncommercial Travel Bureaus and Agencies
Transportation
Public, Industrial, and Private Recreation

MANUFACTURING

Management
Science
Engineering
Machine Trade Occupations
Processing Occupations

MARINE SCIENCE

Research
Chemical and Mineral Extractions
Off-Shore Drilling
Fishing
Aquaculture
Marine Engineering and Technology

MARKETING AND DISTRIBUTION

Marketing Management
Marketing Research and Analysis
Purchasing
Selling
Physical Distribution

PERSONAL SERVICES

Domestic Service
Lodging and Related Service Occupations
Barbering, Cosmetology, and Related Services
Drycleaning, Laundry, and Apparel Services
Stewards, Attendants, Hosts, and Miscellaneous Personal Services
Domestic Animal Care
Food and Beverage Preparation and Services

PUBLIC SERVICES

Administration and Regulatory Services
Urban Development
Education
Protective Services
Post Office
Public Utilities
Public Health
Labor Affairs
Public Transportation
Social Services, Rehabilitation, Correction
Parks and Recreation

TRANSPORTATION

Highway Transport
Rail Transport
Air Transport
Pipeline Transport
Water Transport

Source: Time Share Corporation (TSC). *The Guidance Information System*, Edition 12. (Hanover, N.H., Houghton Mifflin Co., 1981. p. 20.)

Appendix H
Needs Assessment

Sample Surveys

The following examples illustrate the kinds of questionnaires that can be used to obtain needs assessment data from students, teachers and parents. Each is intended simply as a model which local school districts can adapt to fit their particular needs.

STUDENT INTEREST SURVEY

Name _____ Age _____ Grade _____

Current high school program (check one)

College Preparatory _____ Vocational _____ General _____ Other _____

Do you plan on education beyond high school? Yes _____ No _____

If yes, do you plan to attend a:

4-year college _____ 2-year community college _____ technical college _____

private vocational school _____ apprenticeship _____ other _____

For which of the following occupations would you prefer to receive training?

[List occupations available or anticipated locally and regionally.]

Other (Please specify.) _____

List the three kinds of work that you like to do best.

1. _____ 2. _____ 3. _____

List your hobbies.

_____

Here is a list of the present vocational courses at this school. Check those you would be interested in taking. (Do not check those you have already taken.)

[Reproduce a list of local course titles.]

Here is a list of courses which the curriculum committee is thinking about adding to the curriculum. Check those in which you would be interested.

[List those being considered.]

Can you suggest any courses that would prepare you for a job but which are not listed above?

_____ _____

_____ _____

Have you held any jobs outside of school? Yes _____ No _____
If you answered "yes," please list the jobs you have held and explain briefly what you did at these jobs.

_____

_____

_____

_____

If you have taken any courses in the vocational education department of this school, please list the one you think was most valuable to you and why.

Course _____ Reason _____

_____ _____

If you have taken any courses in vocational education, please list the one you think was least valuable to you and why.

Course _____ Reason _____

_____ _____

Looking ahead to the future, what do you expect to be doing as your occupation ten years from now?

_____

Appendix H (continued)

TEACHER SURVEY

Name _____ Subject areas _____
Grade levels taught _____

Below are listed the vocational education courses offered in this school. Please check any that you think need to be revised. On the back of this sheet, briefly explain why.

[List local courses.]

Below are listed vocational courses which the curriculum committee is considering offering in the near future. Check those which you think would be most valuable.

[List those being considered.]

Below is a list of vocational courses. Are there any of these that we are presently offering that you feel ought to be strengthened? Please check.

[Reproduce a list of vocational courses offered.]

Are there any of these areas that you feel should be dropped?

[Repeat list from previous question.]

Please list any course you think should be added in your particular teaching area.

_____

Please list any ways in which you think facilities, equipment, or materials need to be improved in order to strengthen your program.

Facilities _____

Equipment _____

Materials _____

Make any other comments you feel would help us plan curriculum revisions or new programs.

_____

_____

_____

PARENT SURVEY

The district is evaluating its vocational education programs. Please fill out this questionnaire in order to help us in decision making.

PART I

The statements that follow express issues that concern some people about vocational education programs. Please put a check mark in the column headed "Change" next to each issue about which you feel that something ought to be done. Check in column headed "O.K. As Is" next to each issue that you feel is not important or is being handled satisfactorily at this time.

	Change	*O.K. As Is*
Amount of time or class periods spent in vocational education programs	_____	_____
Community perception of vocational education programs	_____	_____
Emphasis on vocational education at school	_____	_____
Requirements for admission to vocational courses	_____	_____
Kinds of training experiences included in classes	_____	_____
Ability of graduates to obtain entry-level jobs in the fields for which they studied	_____	_____
Availability of a cooperative work experience program	_____	_____
Attention in the vocational program to students with special needs	_____	_____
Availability of a vocational program to out-of-school students	_____	_____
Adequacy of the guidance counseling given students	_____	_____
Quality of job placement offered students after course completion	_____	_____
Cost of required special clothing	_____	_____
Cost of required tools or equipment	_____	_____
Discrimination against students in vocational education by other students	_____	_____
Quality of the vocational education offered	_____	_____

Appendix H (continued)

PART II

The following are commonly held expectations for vocational education. If you support an idea, check "Yes." If you do not support an idea, check "No."

	Support	
	Yes	No
Use of a local advisory board to assist in program planning	_____	_____
Opportunity for students to obtain training in several different areas	_____	_____
Opportunity for students to receive training for a specific occupation	_____	_____
Students' ability, after training, to enter the occupation of their choice	_____	_____
Correlated work experience as part of the vocational education program	_____	_____
Vocational programs that are responsive to evident needs of the community	_____	_____
Students allowed to change from one vocational program to another if their personal goals change	_____	_____
Preparation of vocational education students to go on to higher education if they choose	_____	_____
Vocational education correlated with career education so that students can see choices clearly	_____	_____

At what levels do you feel vocational education should be offered to students? Circle all grade levels you think apply.

6 7 8 9 10 11 12 out-of-school adult

Are you willing to	Yes	No
• serve as a member of an advisory committee on vocational education for this district?	_____	_____
• come to school to describe your work or to have students visit your workplace to observe your occupation?	_____	_____
• have students work in your business part-time to gain work experience in a supervised program?	_____	_____

You do not need to sign the questionnaire unless you wish to. However, if you answered "yes" to any of the three questions above, please give the following information so that we may contact you.

Name _____ Sex _____

Occupation _____

Name of Business _____ _____

Phone Number(s) _____ _____

Appendix I
Certification Requirements

The requirements for certification, as specified in Connecticut General Statutes, are given for vocational administrator, agricultural education, business office education, consumer home economics education, distributive education, industrial arts education, occupational education, and vocational technical education.

Sec. 10-145a-92. When required

This certificate, or the certificate as superintendent of schools, shall be required for all administrative and supervisory positions in Connecticut public schools (except state vocational-technical schools, technical institutes, state colleges and public community colleges) including principal, supervisor of instruction, curriculum coordinator, assistant superintendent of schools, administrative or other special assistant to the superintendent of schools, supervisor or consultant in special subjects or fields, supervisor of academic subjects, system director of guidance or other special services, full-time director of adult education, or similar positions. It shall be required for the assistant to a person serving in any such position, if more than twenty percent of the assigned duties of such assistant involves administrative or supervisory requirements.

VOCATIONAL ADMINISTRATOR

Sec. 10-145a-93. Requirements

To receive a provisional certificate as an intermediate administrator or supervisor, an applicant shall establish, by procedures described in section 10-145a-3 of the regulations of Connecticut state agencies, that he or she meets the following requirements:

(a) Holds a permanent or a standard Connecticut teaching certificate; or holds or is eligible for a provisional Connecticut teaching certificate, and meets all course requirements for a standard Connecticut teaching certificate; and holds a master's degree from an approved institution. For purposes of this section, "teaching certificate" means a certificate for professional service in the public schools.

(b) Has completed five years of successful teaching experience, at least three of which shall have been in public schools in the United States, in a position or positions requiring certification in the state in which he or she was employed, or in a position or positions which would have required certification had the service been in Connecticut public schools. Five years of successful teaching experience in a private elementary or secondary school may be

Appendix I (continued)

accepted toward fulfillment of the requirements of this subsection provided the private school has met the conditions of approval as required by the State Board of Education. Consideration may be given toward fulfillment of the requirements of this subsection to applicants who have completed, as part of a planned program of preparation, a substantial period of internship in areas appropriate to the professional career objectives of the applicant, under the supervision of the recommending institution.

(c) (1) Presents the recommendation of an accredited college or university approved in Connecticut for the preparation of administrative and supervisory personnel. The recommendation shall state that the applicant is personally and professionally qualified to serve as a public school administrator or supervisor, and that he or she has completed an appropriate program at the institution specifically for school administration and supervision. The recommendation shall include a statement of the particular administrative or supervisory position which has been emphasized in the preparation. The program on which the institutional recommendation is based shall aggregate not less than fifteen semester hours of graduate study in addition to the master's degree, taken at the recommending institution. (2) The recommendation of an institution at which the applicant has completed no study appropriate to a program of preparation for school administration or supervision within eight years immediately preceding the date of the application shall not be considered valid. (3) Special consideration for waiver of the recommendation may be given to individual applicants who present satisfactory evidence of not less than three years of successful experience in public school administration or supervision in another state, or three years of successful experience in administration or supervision in a private elementary or secondary school provided the private school has met the conditions of approval as required by the State Board of Education and, provided at least two years of such service shall have been completed within five years immediately preceding the date of the application.

(d) Has completed, in his or her total post-baccalaureate program, study in each of the following areas (1) foundations of education (historical, philosophical, sociological, etc.); (2) psychological foundations of learning; (3) curriculum development with emphasis appropriate to the professional career objective of the applicant; (4) educational administration and supervision, with emphasis appropriate to the professional career objective of the applicant; (5) mere completion of courses appearing to meet the requirements shall not be accepted as prima facie evidence that the applicant meets requirements. Compliance with subsection (c) of this section is an absolute prerequisite to acceptance of the total program of preparation.

AGRICULTURAL EDUCATION

Sec. 10-145a-47. Provisional certificate

To secure a provisional certificate to teach vocational agriculture in grades 9 to 12, also valid for teaching non-vocational agriculture and young farmer and adult classes, an applicant shall meet the following requirements in addition to meeting the general conditions:

(a) A bachelor's degree from an approved college of agriculture or college or school of education, with a major in agriculture, and completion of the curriculum requirements for teaching vocational agriculture.

(b) Three years of satisfactory farm experience, all acquired after reaching the age of fourteen.

BUSINESS OFFICE EDUCATION

Sec. 10-145a-16. Validity of certificates

Secondary certificates are valid for all endorsed subjects, unless the certificate otherwise specifies, in grades seven through twelve. A secondary certificate may be endorsed for one or more elementary levels; and it may be endorsed for the teaching of a special subject. When departmentalized instruction is offered in grades below the seventh, a certificate may be considered valid for such instruction in grades five through six in the endorsed subjects only.

Sec. 10-145a-17. Provisional secondary certificate

To receive a provisional secondary certificate, a candidate must present evidence of meeting the following requirements in addition to meeting the general conditions:

(a) Hold a bachelor's degree from an approved institution.

(b) Have a minimum of forty-five semester hours' credit in general education including at least three of the following areas in addition to the area of major specialization; in the areas marked † six semester hours each are required: (1) † English; (2) science; (3) mathematics; (4) † social sciences, including United States history; (5) fine arts; (6) foreign languages. When an applicant presents a planned program of preparation from an approved institution, including the required practice teaching, but lacks course requirements in general or professional education or the teaching field to the extent of not more than six semester hours, he or she may, if otherwise qualified, be issued a provisional certificate valid for one year. Such one-year certificate may be extended for the additional nine-year period on evidence, in the form of official transcripts, of removal of the deficiency. Failure to remove the deficiency within the one-year period of the initial provisional certificate shall terminate the right of the holder to serve in a public school position covered by the expired endorsement.

(c) Have a minimum of eighteen semester hours' credit in professional education, involving a planned pattern of study and experience in secondary education in the following areas; general areas marked † are required:

(1) † foundations of education. This group includes such areas as: (A) history of education, (B) principles of education, (C) philosophy of education, (D) comparative education and (E) community sociology, community resources, social anthropology;

(2) † educational psychology. This group includes such areas as: (A) psychology of learning, (B) human growth and development, (C) child-adolescent psychology, and (D) mental hygiene;

(3) † curriculum and methods of teaching. This group includes such areas as: (A) methods of teaching, (B) the teaching of reading, (C) audiovisual aids in education, (D) individualizing instruction, (E) educational measurements, (F) principles of curriculum construction, (G) the curriculum at a particular level, (H) the curriculum in one specific field and (I) extra-curricular activities. To meet this requirement, an applicant for the provisional secondary certificate in English shall present three semester hours' credit in teaching developmental reading in the secondary school and three semester hours' credit in methods of teaching English;

(4) † supervised observation, participation and full-time responsible student teaching totaling at least six but not more than twelve semester hours' credit as part of the requirement. One year of successful experience teaching at the secondary level in a public school or an approved private school, as attested in writing by an employer, may be accepted as ground for waiving the inclusion of this phase of the professional preparation;

(5) guidance;

(6) health and safety education.

Appendix I (continued)

(d) Have the specified minimum credit in one or two fields of concentration appropriate for the particular subject endorsement sought in accordance with the following requirements:

	Minimum Semester Hours
Business education	30

CONSUMER HOME ECONOMICS EDUCATION

and

INDUSTRIAL ARTS EDUCATION

Sec. 10-145a-21. When required. Endorsements

The certificate for special subjects or fields is required for the following special subjects taught at either or both the elementary and secondary levels: agriculture (non-vocational), art, health, homemaking, industrial arts, library, music, and physical education. Special subjects certificates may be endorsed for grades one through twelve, one through eight, or seven through twelve; they may be endorsed for one or more elementary levels or for one or more secondary subjects.

Sec. 10-145a-22. Provisional certificate

To receive a provisional certificate for a special subject or field, an applicant shall present evidence of meeting the following requirements in addition to meeting the general conditions:

(a) Hold a bachelor's degree from an institution approved for the preparation of special subjects teachers in the field in which certification is requested.

(b) Have a minimum of forty semester hours' credit in general education, including study in at least three of the following areas in addition to the area of major specification; in the areas marked * six semester hours are required:

* (1) English
(2) Science
(3) Mathematics
* (4) Social Sciences, including United States History
(5) Fine Arts
(6) Foreign Languages

When an applicant presents a planned program of preparation from an approved institution, including the required practice teaching, but lacks course requirements in general or professional education or the teaching field to the extent of not more than six semester hours, he or she may, if otherwise qualified, be issued a provisional certificate valid for one year. Such one-year certificates may be extended for the additional nine-year period on evidence in the form of official transcripts, of removal of the deficiency. Failure to remove the deficiency within the one-year period of the initial provisional certificate shall terminate the right of the holder to serve in a public school position covered by the expired endorsement.

(c) Have a minimum of eighteen semester hours' credit in professional education involving a planned pattern of study and experience appropriate to teaching at both the elementary and secondary level and to the special subject for which certification is sought in the following areas; areas marked † are required:

† (1) Foundations of education. This group includes such areas as: (A) history of education, (B) principles of education, (C) philosophy of education, (D) comparative education, and (E) community sociology, community resources, social anthropology;

† (2) Educational psychology. This group includes such areas as: (A) psychology of learning, (B) human growth and development, (C) child adolescent psychology, and (D) mental hygiene;

† (3) Curriculum and methods of teaching. This group includes such areas as: (A) methods of teaching, (B) teaching of reading, (C) audiovisual aids in education, (D) individualizing instruction, (E) educational measurements, (F) principles of curriculum construction, (G) the curriculum at a particular level, (H) the curriculum in one specific field and (I) extra-curricular activities;

† (4) Supervised observation, participation and full-time responsible student teaching totaling at least six but not more than twelve semester hours' credit as part of this requirement. One year of successful experience teaching the special subject in a public school or an approved private school, as attested in writing by an employer, may be accepted as ground for waiving the inclusion of this phase of the professional preparation;

(5) Guidance;

(6) Health and Safety Education.

(d) Have a minimum of thirty-five semester hours' credit or less where noted in appropriate technical courses in a planned program designed to develop competency in the special field to be taught and including the particular areas as noted for each subject:

Homemaking

Science: organic and/or applied chemistry; applied physics; bacteriology, physiology

Foods and nutrition

Clothing, textiles, and consumer problems related to these fields

Applied and related art, housing, home furnishings and equipment

Family economics, home management, family relationships and child care

Industrial Arts

Drafting

Woodworking

Metalworking

Graphic Arts

Electricity

Power Mechanics

Crafts

DISTRIBUTIVE EDUCATION

Sec. 10-145a-54. Provisional certificate

To receive a provisional certificate to serve as teacher-coordinator of cooperative part-time classes, which is required for teaching and/or coordinating cooperative part-time classes in distributive education, an applicant shall meet the following requirements in addition to meeting the general conditions;

(a) A bachelor's degree from an approved institution;

(b) fifteen semester hours' credit in the distributive fields such as merchandising, textiles, advertising, store organization;

Appendix I (continued)

(c) nine semester hours of professional education in such courses as vocational education, organization and supervision of distributive education, school organization, teaching methods, and

(d) one year as a successful paid worker in distributive occupations. Participation in a cooperative part-time program of college grade is accepted for meeting this requirement.

OCCUPATIONAL EDUCATION

Sec. 10-145a-58. When required

This special teacher certification has been formulated to meet the unique requirement for teachers of those occupational programs which call for special knowledge, skill and experience in a field not provided for in the present teacher preparation institutions. This classification includes teachers of semi-skilled occupational subjects in approved vocational education programs in day or evening school in the particular special semi-skilled area endorsed in the certificate, e.g., welding, automotive servicing, machine operations, appliance repair, etc.

Sec. 10-145a-59. Provisional certificate

To receive a provisional certificate to teach occupational subjects, applicant shall present evidence of meeting the following requirements in addition to meeting the general conditions:

(a) Hold a high school diploma or its equivalent.

(b) Have a minimum of three years approved successful work experience in the field to be taught which embraces those aspects of work included in the curriculum. Letters from employers verifying employment will include dates of employment and description of duties.

(c) Complete a minimum of two courses in preparation for teaching in vocational and industrial education.

These courses must include concentration in Methods of Teaching Vocational Subjects and Principles of Vocational Education. Alternatives for formal course work may be presented to show proficiency in the following competencies:

(1) Have the ability to employ recognized methods of teaching, including the latest techniques, as they relate to the subject area;

(2) Have demonstrable knowledge of classroom organization and management, including discipline;

(3) Have the ability to use, design and/or adopt teaching materials and aids for use in the classroom;

(4) Have demonstrable knowledge of the objectives, influences, values and contributions of vocational education as it relates to society in general and education including the student in particular.

VOCATIONAL TECHNICAL EDUCATION

Sec. 10-145a-43. When required

This certificate is required of technical instructors and vocational instructors in such fields as radio, television, etc. A vocational-technical field is one of which technical knowledge is regarded as greater in importance than trade skills.

Sec. 10-145a-44. Provisional certificate

To receive a provisional certificate to teach vocational-technical fields, an applicant shall meet the following requirements in addition to meeting the general conditions:

(a) A bachelor's degree with a major in the technical field to be taught.

(b) Three years of satisfactory industrial experience.

(c) A minimum of two courses in preparation for teaching in vocational and industrial education.

Appendix J
A Philosophy for Business Education

Sample

Business education makes a significant contribution to general education in a business-oriented society where everyone needs a high degree of economic literacy. Business education also can provide valuable skills and knowledge for those who plan postsecondary education either in the field of business or in other areas. However, the prime emphasis of business education in Connecticut is vocationally oriented toward job entry and more advanced positions for those students who desire careers in business.

Each business education program should be based on a philosophy which has been reduced to writing and contains a broad statement of aims or goals which will serve as a guide for determining specific objectives for each course in business education. This philosophy, also a frame of reference for evaluation, must be revised periodically so that the business curriculum can be changed to provide for the rapidly changing needs of the community served by the school.

Improvement of any educational endeavor is a gradual process and is best fostered in a business education environment noted for flexibility, diversity, and experimentation. Business programs must be developed to offer both group and individualized instruction to prepare students for many diverse business occupations.

Business education in the secondary schools of Connecticut requires that:

- Each school should give adequate preparation to the students to secure employment in any geographic area or in any type business occupation desired. Hence, business education must provide for differences of:

  occupational choice within several types of business
  occupational competency level
  physical and mental capability of students

  Though flexibility of choice is important, students must take in proper sequence certain courses to achieve the maximal level of occupational competency.

- Materials to be incorporated into the curriculum must be arranged according to difficulty level into an orderly logical progression from the simple to the complex. Business education is but a part of the total education of Connecticut youth and must be planned as an integral part of total education with sufficient allocation of time and resources so that students may progress toward higher levels of vocational competence which require the use of modern, complex, expensive equipment.

- The business education department should coordinate the various levels of education (primary school through secondary school and perhaps adult education) so that there be no unnecessary lateral or vertical duplication of study which does not contribute significantly to the attainment of the goals of the business education program.

- Business students should be grouped in classes according to their needs and specific instructional goals. As these needs and goals change, so must the grouping of students change; thus group assignments may be either for a relatively short or long time period within the school year.

- Students must be evaluated according to their progress toward vocational competency as indicated by behavioral objectives and/or performance based goals. Tests must be designed specifically to measure goal attainment in any given instructional situation—the measurement of factual material attained is insufficient. Supportive staff such as psychologists, guidance personnel, psychiatrists, social workers, and speech therapists must be available to administer specialized or standardized tests to reveal specific learning difficulties and to help implement remedial measures where possible. These supportive personnel must be made available so that a close working relationship between students, business teacher, supportive staff, and parents may be fostered.

- The business education department must work cooperatively with the supportive staff to help each student with the problems of personal living, educational choices which are consistent with vocational objectives within reach of the student, and with occupational placement and adjustment. This process should not be prohibitory, but rather positive to arrive at intelligent choice by the student. However, the basis of selection of specific occupational preparation is the interest, ability, and aptitude of the student analyzed in light of economic trends and the needs of business. Employment opportunities, requirements, promotional possibilities, and the monetary or social rewards of each possible business career should be presented clearly and intelligently as the basis for the student's rational decision.

- The business education department should have an effective guidance, placement, and follow-up program which will actively seek positions for its graduates and follow those placed to determine how effectively the school program prepares persons for vocational life. Attention must also be given to those not placed so that remedial action, if appropriate, be undertaken.

- The staff of the business education department must be competent in modern business techniques, must be acquainted with and able to choose and use effectively the business equipment, the methods, and materials of instruction to secure maximal results in minimal time with the least cost.

Appendix J (continued)

- The professional staff should be encouraged to avail themselves of opportunities for professional growth through formal course work, attendance at conferences, workshops, meetings of professional organizations, interschool visitations, work experiences and other similar activities. In addition to supporting these activities, an adequate professional library, including appropriate current periodicals, films, filmstrips, cassettes, recordings, and other audiovisual materials with the necessary adjunct equipment and staff to supplement professional development and classroom activities, should be developed, maintained, and financed by the community.

- The business education department must actively engage in research seeking more efficient ways that business accomplishes its tasks and to present these new methods to students.

- The business education department have an adequate budget to secure, maintain, and adequately house the equipment necessary to keep abreast of rapidly changing business technology. No student can be prepared to enter today's business employment world with yesterday's skills and knowledge.

- The business education department should be able to justify the expenditure of funds and other resources either on a per-item or program basis. Common elements of various business curricula should be presented in common courses so that there be no unnecessary competition or duplication of endeavor caused by these curricula.

- An individual within each business education department should be designated and held responsible for the business education curricula. This person provides liaison between school administration, students, teachers, parents, and the business community to insure that changing socioeconomic needs are met. Ordinarily, this person should be identified as department head, department chairman or other distinctive title.

- The business education department and other departments of the school should have a close relationship based on mutual respect which can be attained only through intellectual honesty that reveals school problems as well as reporting progress and achievement. Both the school and the public should have as goals improvement of the educational product and the solution of educational problems. Assistance for curricular development in business education should be solicited from qualified citizens of the local community (advisory committee), college and university personnel, and the school's own professional staff. The findings from appropriate research studies should be made available to aid in developing a curriculum based on actual on-the-job working methods and conditions.

- The business education department should develop and maintain an effective public/community relations program. Business people should visit and be welcome in the school and the business teachers should visit, seek part-time employment in their business specialty, and be welcome in the business community. In this way both groups may work cooperatively to solve the mutual problems inherent in the preparation of capable workers.

- The business education department should have an effective cocurricular program of field trips, guest speakers, conferences, career days, and youth organizations (such as FBLA and DECA) which is of vital importance to strengthen the formal course offerings.

The Objectives of Business Education

Though business education contributes to general educational objectives, the major emphasis of business education in the State of Connecticut is toward occupational competency. Specific objectives for courses found within the scope of business education are given with the presentation of each course. Only the overall objectives of the total business education program are presented here:

Vocational objectives

The major vocational objectives of business education are to:

- provide competent workers with technical skills, ethics, knowledges, and attitudes necessary for success in business to meet local, state, and national needs;
- explore jobs related to students' vocational choices for increased knowledge and vocational competence;
- acquaint students with various types of business positions consistent with students' interests, capabilities, knowledges, and skills;
- develop understanding of employment opportunities to include advantages and disadvantages of various kinds of business work;
- develop an appreciation for the role of business in a democratic society;
- give attention to personality growth so that a foundation for good interpersonal business relationships may be established;
- show the necessity and means to cope with rapid change in business occupations, and from analysis of these changes foster some ability to discern trends for future employment patterns;
- foster constructive attitudes toward self-education and advancement, and
- foster self-respect and pride in what students are able to achieve in business.

Source: Connecticut State Department of Education. *Education for Business*. Hartford: 1977.

Appendix K
Job Service Offices

There are 19 local job service offices in Connecticut operated by the Connecticut Labor Department. The addresses and telephone numbers of the local offices are given below. They can serve as a resource to vocational education curriculum planners and counselors.

Ansonia	555 Main Street	734-3367
Bridgeport	816 Fairfield Avenue	579-6262
Bristol	59 North Main Street	582-7421
Danbury	64 West Street	797-4140
Danielson	61 Westcott Road	774-9460
Enfield	620 Enfield Street	623-9121
Hartford	90 Washington Street	566-5771
Manchester	806 Main Street	649-4558
Meriden	24 Scuth Grove Street	238-6110
Middletown	170B Main Street	344-2993
New Britain	100 Arch Street	827-7765
New Haven	634 Chapel Street	789-7731
New London	94 Captains Walk	443-8321
Norwalk	731 West Avenue	838-0623
Norwich	6 Cliff Street	889-5247
Stamford	20 Summer Street	348-7505
Torrington	350 Main Street	482-5583
Waterbury	83 Prospect Street	755-0638
Willimantic	979 Main Street (Town Hall)	423-2521

Appendix L
Connecticut Resource Centers for Print and Nonprint Materials

Print (P) and Nonprint (N) materials available at resource centers in 11 subject areas of vocational education.

Borrowing privileges depend on individual agency policy.

	Bulkeley Career Education Resource Center	East Catholic Curriculum Resource Center	East Lyme Media Center Project LEARN	Fairfield Career Education Resource Center	Litchfield REACH	New Britain Curriculum Laboratory	New Haven Teacher Resource Library—ACES	Southeastern Connecticut Library Association	Stamford Wildbrook Education Connection Regional Educational Service Center	Torrington Cooperative Work Experience Resource Center	Vernon Career Center—CES	Storrs Center for Vocational Education	Storrs Center for Instructional Media and Technology	Stratford Business and Marketing Resource Center	Waterbury Region I Cooperative Library Service Unit	West Hartford Capitol Region Education Council (CREC)	West Hartford Curriculum Center	St. Joseph's College Media Center	Library Service Center
Agriculture[1]	N, P		N		N, P		N, P		N, P		P	P	N, P		N, P	N			
Career Education	N, P	N, P	N	P	N, P	N, P	N, P		N, P		N, P	N, P	N, P	N, P	N, P	N, P			P
Consumer and Homemaking	N, P		N		N, P	N, P	N, P		N, P		N, P	N, P	N, P	N, P	N, P	N	N, P		P
Cooperative Education	N, P				N, P		P			N, P	P		N	N, P	N, P	N			
Marketing and Distribution	N, P		N		N, P	P	N, P		N, P		P			N, P	N, P	N			
Health Occupations	N, P		N		N, P	P	N, P		N, P		P		N, P	N, P	N, P	N			
Industrial Arts	N, P		N		N, P	N, P	N, P		N, P		P		N, P		N, P	N			
Occupational Home Economics	N, P		N		N, P		N, P		N, P		P			N	N, P	N	N, P		
Business Office Education	N, P		N		N, P	N, P	N, P		N, P		P		N, P	N, P	N, P	N			P
Technical	N, P				N, P	P	N, P		N, P		P				N, P	N			
Trades and Industrial	N, P					N, P	N, P	N[3]	N, P		P	P		N, P	N, P	N			
Other	N, P	N, P[2]	N	P[4]		N, P			N, P		P	N, P			N, P				

P = Print; N = Nonprint

1) For Regional Vocational Agricultural Centers, see Appendix D
2) Automotive Repair
3) Special Education
4) Prevocational, Job-seeking and Life Skills

Footnotes

1. Curtis R. Finch and John R. Crunkilton, *Curriculum Development in Vocational and Technical Education* (Boston: Allyn and Bacon, Inc., 1979), p. 77.

2. Adapted from Curtis R. Finch and John R. Crunkilton, *Curriculum Development in Vocational and Technical Education* (Boston: Allyn and Bacon, Inc., 1979), pp. 174–175.

3. Ibid, pp. 189–191.

Glossary

Adult Education	Programs offered to those who need skill development for upgrading in a given occupation or for retraining
Certification	Authorization granted after the minimum academic, professional, and other standards established by the State Department of Education are met by those who wish to teach full- or part-time in the public school system
Cooperative Work Education	A method of instruction in vocational education for persons who through written cooperative arrangements between the school and employers, receive instruction, including required academic courses and related vocational instruction by alternation of study in school with a job in a related occupational field, but these two experiences must be planned and supervised by the school and employers so that each contributes to the student's education and employability. Work periods and school attendance may be on alternate half-days, weeks, or other periods of time.
Course of Study	An inclusive outline of objectives, experiences, skills, projects; demonstrations, related information and methods involved in teaching a subject; covers a specified period of time
Curriculum	The series of courses or units designed to cover the instruction in a designated field. It may refer also to the whole body of courses offered in an educational institution.
Exploratory	Description of a program which allows investigation of an occupation and provides an overall view of the knowledge and skills involved; introductory experiences which aid in choosing a vocation
General Related Instruction	Includes in-school courses and individualized instruction specifically designed to develop employability skills common to all occupations (See also specific related instruction.)
Integral	Part of the whole program, not separate
Labor Market Area	A geographic area consisting of central city (or cities) and the surrounding territory within a reasonable commuting distance

Occupational Objective	The intended outcome of training and other preparation as stated by the student or implied by the objectives of the instructional program
Out-of-School Youth	Persons under 21 years of age excluding children below school age, who (a) are not elementary or secondary school pupils and (b) are not taking courses for college credit toward degree or equivalent certificates
On-the-Job Training	Instruction designed by employers to give students direct contact with, and/or experiences in, the daily work of industry, business and other occupations. Students usually perform learner-level tasks in regular employment situations. Usually the minimum or beginning wage is paid.
Postsecondary	A program for those who have completed a high school program
Sex Bias	Behaviors resulting from the assumption that one sex is superior to the other
Sex Discrimination	Any action which limits or denies a person or group of persons opportunities, privileges, roles or rewards on the basis of sex
Sex Stereotyping	Attributing behaviors, abilities, interests, values and roles to a person or group of persons on the basis of sex
Supervised Occupational Experience Program (SOEP)	A term common to vocational agriculture related to a required experience program which is carried on by the student beyond the school program
Skill Development	The training which directs its instruction toward developing the skills, operating techniques and general knowledge required to function successfully in single skill occupations
Specific Related Instruction	To develop specific skills related to the student's chosen occupation and to the specific occupation for which the student is being trained on the job (See also general related instruction.)
Training Agreement	An agreement, prepared by the teacher-coordinator, indicating the period of training, hours of work, salary, and other pertinent information necessary to assure basic understanding of the student's position as a student learner in the cooperative education program.
Training Plans	Indicates what is to be learned and whether it is to be taught in the classroom (group or individual instruction), shop or laboratory (on-the-job or project). The plan is derived from a realistic analysis of the tasks, duties, responsibilities, and occupational objectives of the student learner.
Training Sponsor	The individual to whom the student learner looks for instruction and training on-the-job. The on-the-job training sponsor may be the owner or manager or a responsible individual appointed by management.

Vocational Advisory Committee — A formally organized group of individuals, selected because of their knowledge and experience, to advise the education policy-making body and professional educators within a jurisdiction on matters pertaining to vocational and career education programs and services

Vocational Curriculum — The organized sequence of experiences, and offerings planned for the purpose of facilitating occupational choices; preparing for, or advancing in employment; or, making adequate preparations for a change in employment as technology economics, or societal conditions alter the nature and availability of employment

Vocational Guidance — Assistance to individuals in making vocational choices and clarifying vocational goals. It often involves testing and interpretation of aptitudes, interests, personality factors, etc.

Work Experience — A program having as its purpose the part-time employment of students in order to assist them in acquiring desirable work habits for and attitudes toward the world of work. The part-time job need not be related to the student's occupational objective.

Work Study — A program designed to provide financial assistance, through part-time employment, to students who have been accepted for full-time enrollment in vocational education programs and require such aid in order to continue in vocational training. The part-time employment is based on the financial need of the student and is not necessarily related to the student's occupational objective.

Connecticut State Department of Education

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